INVENTORY OF MINED LANDS
IN THE MINTO-CHIPMAN
COAL MINING REGION

Report by Melanie MacPherson
Terry O'Donnell

Edited by George Greer
Catherine MacLaggan

Published by Department of Natural Resources
N. B. Coal Limited
Environment N. B.

October 1985

TABLE OF CONTENTS

Page

Table of Contents....................................i

List of Appendices...................................iii

Introduction...1

Terms of Reference...................................3

Summary..4

Materials and Methods
    Forestry...8
    Ponds..9
    Streams..10
    Soils..10
    Vegetation.......................................11

Section I..14
    Section I A - Eighteen Brook North Mine..........14
    Section I B - Eighteen Brook South Mine..........17
    Section I C - Wildcat Brook Mine.................20
    Section I D - Albrights Corner North Mine........23
    Section I E - King Road/Little River Mine........25
    Section I F - Wuhr's Beach Mine..................28
    Section I G - Fire Road Mine.....................30

Section II...31
    Section II A - Hardwood Ridge Heath Mine.........31
    Section II B - Northside Drive/Heath Mine........33
    Section II C - North Minto Mine..................35
    Section II D - Slope Road/North Minto Mine.......36
    Section II E - Slope Road Mine...................38
    Section II F - Slope Road Mine...................39
    Section II G - Slope Road Mine...................40
    Section II H - Hardwood Ridge Mine...............41
    Section II I - Bairds Hill Mine..................42
    Section II J - Bairds Hill Mine..................43
    Section II K - New England Mine..................44
    Section II L - New England Mine..................46
    Section II M - New Avon Mine.....................48
    Section II N - New Avon Mine.....................50
    Section II O - Avon Mine.........................52
    Section II P - Newcastle Bridge Mine.............54
    Section II Q - Newcastle Bridge Mine.............55
    Section II R - Newcastle Centre Mine.............56
    Section II S - Newcastle Centre Mine.............57
    Section II T - Newcastle Centre Mine.............58

Section III...60
- Section III A - Midland Mine...........................60
- Section III B - Midland Mine...........................62
- Section III C - Midland Mine...........................64
- Section III D - Midland Mine...........................65
- Section III E - Midland Mine...........................67
- Section III F - Midland Mine...........................68
- Section III G - Midland Mine...........................70
- Section III H - Midland Mine...........................72
- Section III I - Salmon Harbour Mine....................73
- Section III J - Salmon Harbour Mine....................75
- Section III K - Salmon Harbour Mine....................79

Section IV..82
- Section IV A - Dufferin Mine...........................82
- Section IV B - Coal Creek Mine.........................84
- Section IV C - Long Creek Mine.........................86
- Section IV D - Salmon Harbour Mine.....................88
- Section IV E - Moray Point Mine........................90

Section V...92
- Section V A - Avon Road Mine...........................92
- Section V B - Coal Creek Road Mine.....................94
- Section V C - Avon Road Mine...........................96
- Section V D - Coal Creek Road Mine.....................98
- Section V E - Coal Creek Road Mine....................100
- Section V F - Coal Creek Road Mine....................102
- Section V G - Avon Road Mine..........................104
- Section V H - Coal Creek Road Mine....................106
- Section V I - Coal Creek Road Mine....................107
- Section V J - Marshal Road Mine.......................108
- Section V K - Range Mine..............................110
- Section V L - Range Mine..............................112
- Section V M - Salmon River Road Mine..................114

Bibliography...115

Acknowledgements...116

Appendix A....................General Inventory Information

Appendix B.........................Vegetation Information

Appendix C.......................................Map Series

LIST OF APPENDICES

Appendix A

Table A - 1(a) Forest Inventory for Strip-Mined Areas Near Minto and Chipman

Table A - 1(b) List of Abbreviations for Species Composition of the Forest Inventory

Table A - 2(a) Physical Characteristics of Selected Priority Ponds in the Minto-Chipman Area

Table A - 2(b) Description of Selected Priority Ponds in the Minto-Chipman Area

Table A - 2(c) List of Inventory Pond Numbers With Corresponding Department of Natural Resources Angling Pond Numbers and Names

Table A - 3 Characteristics of Streams Passing Through Strip-Mined Areas Near Minto and Chipman

Table A - 4(a) Quantitative Analysis of Soil Samples Taken From Strip-Mined Areas Near Minto and Chipman

Table A - 4(b) Description of Soil Sample Locations in Strip-Mined Areas Near Minto and Chipman

Table A - 5(a) Summary of Inventory Data for Strip-Mined Areas Near Minto and Chipman

Table A - 5(b) Area of Mined Land Forested, With No Tree Life, and "Non-contoured, Not Planted and Openly Stocked or With No Tree Life"

Table A - 6 Owners of Private Land Distrubed by Strip Mining in the Minto-Chipman Area

Appendix B

Table B - 1(a) List of Groundcover Vegetation Species Including Their Habitats and Densities Per Transect for Mine Sites in the Minto-Chipman Area

Table B - 1(b) Species List of Vascular Plants Found in Strip-Mined Areas Near Minto and Chipman

Table B - 1(c) List of Various Mined Land Habitats and Their Most Common Species

Table B - 1(d) Density of Groundcover Vegetation On Mined Land In the Minto-Chipman Area

Table B - 2(a) List of Lichen Species Per Transect on Strip-Mined Sites in the Minto-Chipman Area

Table B - 2(b) Species List of Lichens Found in Strip-Mined Areas Near Minto and Chipman

Table B - 3(a) List of Moss Species Per Transect on Strip-Mined Sites in the Minto-Chipman Area

Table B - 3(b) Species List of Mosses Found in Strip-Mined Areas Near Minto and Chipman

Table B - 3(c) List of Unidentified Mosses Found in Strip-Mined Areas Near Minto and Chipman

Table B - 4 List of Terms Used in Describing the Frequency At Which Plant Species Were Encountered

Appendix C

Map Series Section Index Map (1:50,000)

General Inventory Maps (1:10,000)

Forest Cover Maps (1:10,000)

Property Maps (1:10,000)

INTRODUCTION

The Reclamation Committee, a group consisting of representatives from the Department of Natural Resources (DNR), the Department of the Environment (ENB), and the Department of Agriculture and Rural Development initiated this inventory of mined lands in the Minto-Chipman area. The inventory project was designed to provide information to the Committee in order that it could formulate recommendations about reclamation of the mined lands.

The inventory project was funded jointly by the Department of Natural Resources, N. B. Coal Limited, and the Department of the Environment. Project supervision was provided by George Greer (DNR) and Cathy MacLaggan (ENB), both members of the Reclamation Committee.

This report is presented in five parts, each dealing with a specific region of the strip-mined lands near Minto and Chipman. Each part is divided into several sections with the following format:

a) General Description
b) Forestry
c) Ponds
d) Streams
e) Soils
f) Vegetation

This format is based on the Terms of Reference (page 3) prepared by the Reclamation Committee.

During the project it was necessary to make certain changes to the requirements outlined in the Terms of Reference. For example, due to insufficient field data, information relating to the vigour and diameter of trees has been excluded from the report. Also, pond studies were restricted to the larger ponds referred to as "priority ponds". Information concerning streams and drainage systems is limited to the physical characteristics indicated in Table A - 3, and the information shown in the map series of the report.

Information concerning owners of mined land is restricted to the names and assessment numbers available from 1972-1981 assessment maps provided by the Department of Municipal Affairs. The addresses of the land owners, as required in the terms of reference are not included in the report.

Furthermore, analysis of soil samples for nitrogen levels was omitted. The Reclamation Committee determined that nitrogen analysis was not required based on the very low levels recorded previously (Meadows et. al., 1967-1973).

In regards to vegetation, species lists were prepared for both vascular plants (plants with well developed roots and stems), and non-vascular plants (mosses and lichens). However, a complete list of mosses was not available at the time of publication.

Certain aspects of the mined land were not observed in the field, and therefore were not incorporated into the report. These include accessways, such as pipelines and open trails, and features of the old mine workings such as ventilation raises and adits.

Much of the original information used in preparing this report was available in Imperial units. It was most convenient to continue in that manner, as opposed to converting to metric units.

The information in this report is current up to August 1984.

TERMS OF REFERENCE

1) Identify the boundaries of the disturbed land and the land ownership boundaries.

2) List the names and addresses of the present landowners.

3) Identify the present water features such as streams, lakes, ponds and drainage systems.

4) Indicate the present accessways such as roads (and condition), transmission lines, pipelines, old railway beds, existing railways and open trails.

5) Identify the present features of the old mine workings such as shafts, ventilation raises, adits, underground surface dumps, wash plant tailings, open surface workings, buildings,etc.

6) Record natural regeneration of trees on mined lands; identifying species, vigour, stocking, height, diameter and age, and the approximate acreage and slopes of contoured and non-contoured lands.

7) Define the areas planted with trees by the Department of Natural Resources; identifying tree species, vigour, stocking, height, diameter and age, and the approximate acreage and slopes of contoured and non-contoured lands.

8) Identify the location and acreage of contoured and non-contoured lands and the approximate slope where no regeneration has taken place.

9) Record the location, surface acreage, maximum depth and pH of all ponds, as well as the pond accessibility and a description of the bank slopes.

10) Determine the current use of the ponds.

11) Record the pH, flow and colour of streams affected by the disturbed areas.

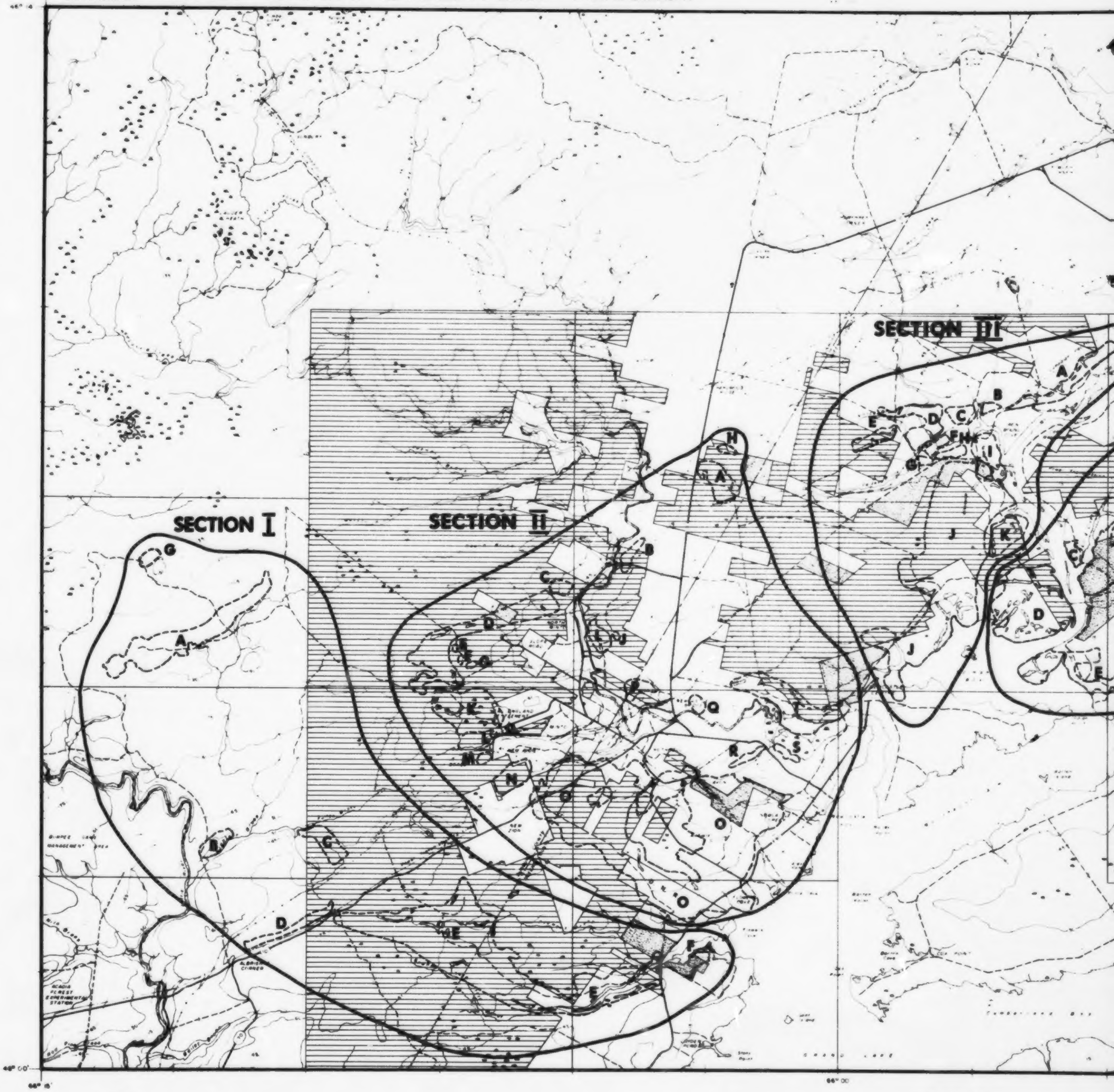
12) Identify the location, slope and depth of abandoned highwalls.

13) Identify the parent material, soil pH and nutrients, namely nitrogen, phosphorus, potassium, calcium and magnesium of the disturbed lands.

14) Record the location, density and species of existing groundcover vegetation on the disturbed lands (excluding trees).

15) Determine the current use of each of the disturbed land areas and the degree of utilization.

MINTO - CHIPMAN MINED LANDS INVENTORY PROJECT



46° 10'
SECTION I
SECTION II
SECTION III
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
BURPEE GAME MANAGEMENT AREA
ACADIA FOREST EXPERIMENTAL STATION
GRAND LAKE
Cumberland Bay
46° 00'
66° 15'
66° 00'

Prepared by:

THREE - D
GEOCONSULTANTS
LIMITED

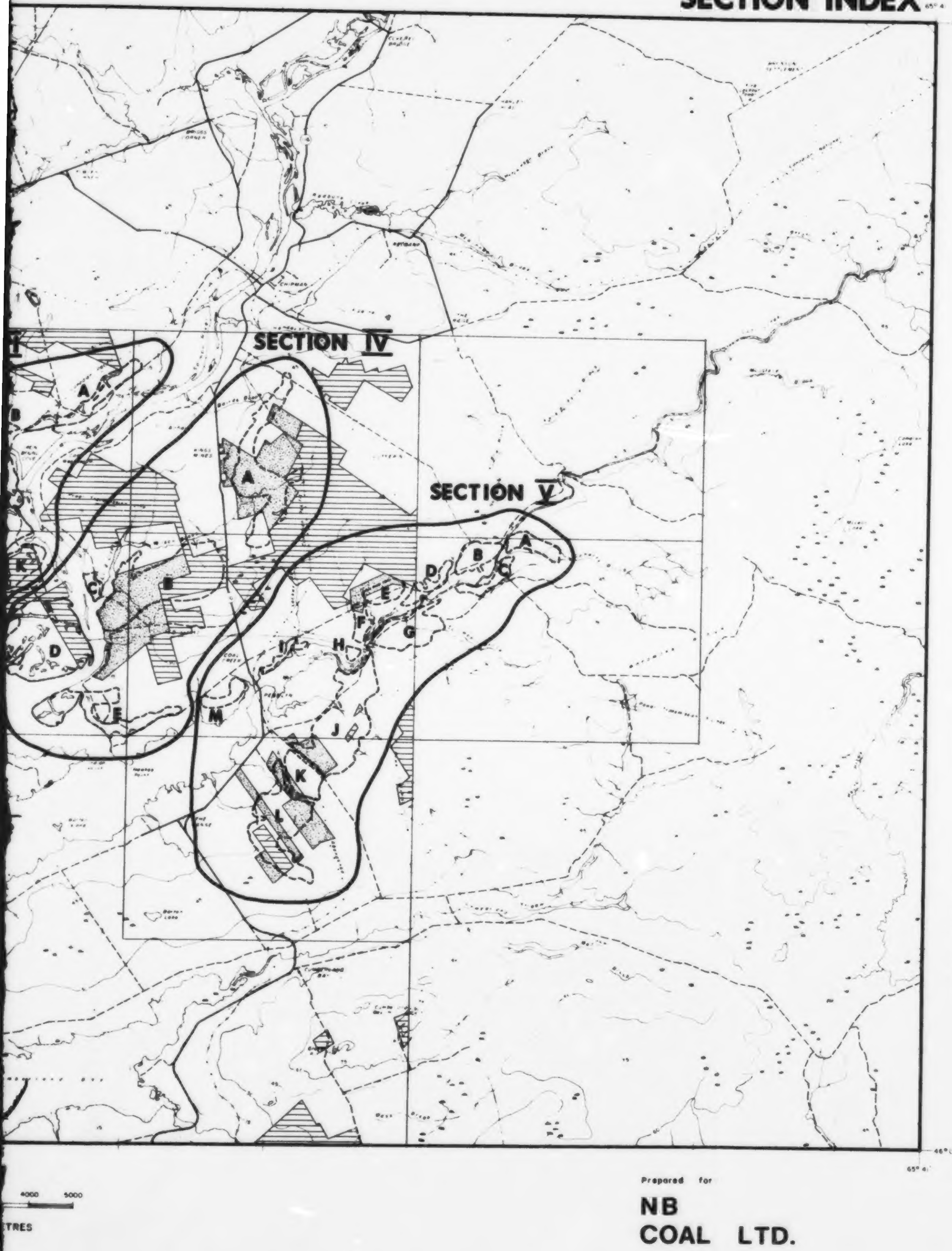
SCALE 1:50,000

Metres 1000 0 1000 2000 3000 4000 5000

CONTOUR INTERVAL 15 METRES
(ERROR OF ±15%)

SECTION INDEX

MINING LICENCE
No: 1307



4000 5000

TRES

—LEGEND—

- Main roads
- Secondary roads and trails
- Railway
- Power transmission line
- Lake or pond
- Rivers and streams
- Wetland
- Topographic contours (note For the sake of simplified representation, the values converted to the metric system are 1.6 % below their actual values)
- Section boundary
- H Mined area index
- ☐ Private property
- ▤ Crown land
- ▨ N.B. Coal property
- Area disturbed by Strip Mining

1:10,000 Topography (Ortho) Index

	21 J/01 W3	21 J/01 W4	21 I/04 U3	21 I/04 U4	21 I/04 V3
21 J/01 V2	21 J/01 W1	21 J/01 W2	21 I/04 U1	21 I/04 U2	21 I/04 V1
21 J/01 S4	21 J/01 T3	21 J/01 T4		21 I/04 R4	
21 J/01 S2	21 J/01 T1	21 J/01 T2			

Prepared for

**NB
COAL LTD.**

SUMMARY

GENERAL DESCRIPTION

Approximately 15,030 acres have been disturbed by coal mining in the Minto-Chipman region. Of this area, 14,031 acres are land area, and 999 acres are pond area. About 2428 acres of the total area was mined between 1976 and 1984; N. B. Coal Limited is responsible for reclaiming lands disturbed after 1977. About two thirds of the mined land is owned by the Crown; the remaining third is owned by N. B. Coal Limited, other companies and private individuals. Detailed maps of the mined lands are enclosed in the appendices of the report. For purposes of the inventory, the mined lands have been divided into five major areas composed of fifty five sections.

Most of the early mining in the Minto area was shaft mining (underground), but after 1950, the method of mining shifted to strip mining (surface). Available information indicates that, before 1969, when N. B. Coal Limited consolidated all of the existing mining operations, mining was carried out by R. Swift, the Fitton Company, Avon Coal Ltd., Lafferty Brothers, the King Mining Company, L. Swift, Frank Horgan, the Miramichi Lumber Company, Aubrey Wasson, and D. W. Mills. Since 1969, Knox Contracting Ltd. and, at times, several smaller operators have mined in the area under contract to N. B. Coal Limited.

In August 1984, the following mining operations were active in the region: N. B. Coal Limited (500 dragline at the Eighteen Brook North Mine, 7400 dragline at the Fire Road Mine, 8200 dragline at the Salmon Harbour Midland Mine, 9W dragline at the Dufferin Mine, and 7200 dragline in the Solomon Brook area, south of Coal Creek), Knox Contracting Ltd. (4600 dragline at the Northside Drive Heath Mine, 200W and 4500 draglines in the Solomon Brook area), and Carter Quigley (backhoe operation at King Road Mine).

The mined lands are located in and around the villages of Minto and Chipman. Roughly 1500 acres of mined land are inside the Minto village limits, and about 165 acres are inside the Chipman village limits.

The distance from mined land to the nearest residences varies from less than one quarter mile to four miles. Most of the mined lands have good access by dirt roads.

FORESTRY

Of the 14,031 acres of the mined region which are land area, 24% have no tree life, 36% have been reforested (planted with trees) by the Department of Natural Resources, and 40%

are naturally regenerating forest. The most common tree species in the reforested area are Jack Pine, Red Pine, Scotch Pine, and Black Locust. In the naturally regenerating areas, Gray Birch, Trembling Aspen, White Birch and Pin Cherry are the most common tree species. Approximately 5535 acres or 39% of the mined land area is designated as "non-contoured, not planted and openly stocked or having no tree life". This area warrants special consideration by the Reclamation Committee.

Forest stocking (the percentage of crown closure) of the mined lands is as follows: 7% dense stocking, 24% medium stocking, 44% open stocking, and 25% no tree life. The oldest trees growing on mined land are about 30 years old, but most are much younger.

It is estimated that 1925 acres or 14% of the total land area has been recontoured to date. The slope of recontoured spoils ranges from 0-10°. The largest blocks of recontoured land are found at the Range Mine, Coal Creek Mine, Salmon Harbour Mine, and Wildcat Brook Mine.

Most non-contoured lands have slopes ranging from 30-40°. Non-contoured highwalls, however, have slopes which are very steep, usually about 80-90°. A highwall is actually the last cut of a strip mining operation. Approximately 50 highwalls, varying in length from 100 yards to 5500 yards, have been identified from 1982 aerial photographs of the Minto-Chipman area.

Although field information concerning the heights of spoil slopes and highwalls is not complete, the following conclusions are obvious from the information available. The height of the mine spoils and highwalls is greatest in the Salmon Harbour Midland area where the largest dragline, the 8200, has worked. The lowest spoils are found in the older mined areas. The average height of the spoils ranges from 10 to 45 feet. The height of the highwalls above ponds ranges from 5 to 45 feet, however, the height of dry highwalls is often greater.

PONDS

There are approximately 850 ponds in the mined area. Of the 224 "priority" ponds, that is, those with areas larger than one acre or those stocked by the Department of Natural Resources, 153 were surveyed for the inventory. For the ponds surveyed, surface areas ranged from 0.25 to 32.0 acres, maximum depths from 2.5 to greater than 50 feet, pH's from 2.5 to 8.1 (most pH's were near 6.0), and surface temperatures from 61 to 81°F. Where emergent vegetation has become established, grasses and cattails are common species. Most of the ponds surveyed have fair to good accessibility.

The priority ponds surveyed had a variety of uses including angling, swimming, water supply for the Flower's Cove Fish Hatchery, dumping garbage, and habitat for aquatic life including beaver, muskrat, ducks and other birds. Duck boxes have been placed on several of the ponds to encourage nesting in the area. About half of these ponds have no apparent use at present.

STREAMS

Thirty six streams, which are on or pass through mined areas, were surveyed during the inventory. Stream temperatures ranged from 48 to 75°F, pH's from 3.0 to 7.0 (most pH's were about 5.7), and flows from 0.2 to 20.1 cubic feet per second.

SOILS

One hundred soil samples were collected from the mined areas. Analysis showed:

a) most pH's were about 4.5 (ranging from 2.8 to 5.9),

b) most phosphorus levels were very low (ranging from very low to medium levels, 5 to 174 pounds P_2O_5 per acre),

c) most potassium levels were low (ranging from very low to very high levels, 13 to 348 pounds K_2O per acre),

d) most calcium levels were very high (ranging from very low to very high levels, 5 to 4000+ pounds Ca per acre), and

e) most magnesium levels were medium to high (ranging from very low to very high levels, 20 to 400+ pounds Mg per acre).

Nitrogen levels were not measured for the inventory because previous records had shown very low results. Soil texture is mostly clay and sand with occasional silt and rock noted. Drainage at most sample sites was good. The parent materials of the mined lands are sandstone and shale. Section II near Minto is mostly sandstone, but the other four major sections are a mixture of sandstone and shale. Some areas, for example the Coal Creek and Avon Mines, are mostly shale; while other areas like Slope Road and Hardwood Ridge/Heath Mine are sandstone.

GROUNDCOVER VEGETATION

The inventory included 113 vegetation transects (for plants under three feet in height) throughout the mined area. From these transects, 209 species of vascular plants (defined as plants with well developed roots and stems), and 27 species of lichens were identified. Eight species of moss were identified, however, some of the moss samples collected were not identified.

The most common vascular plant species were Gray Birch, Downy Golden Rod, Trembling Aspen, Horsetail, Evening Primrose, Coltsfoot, Common Raspberry, Mouse Ear Hawkweed, White Birch, Bristly Sarsaparilla, Carex scoparia Schkuhr (a sedge), Wire Grass, Lance Leaved Golden Rod, Stinking Willie Ragwort, and Canada Blue Grass.

Common non-vascular plants included a lichen species named Cladonia cristatella, crustose lichens, and the following identified mosses, Polytrichum strictum, Sphagnum fallax, and Polytrichum juniperum.

Certain vascular plants were found associated with the particular habitats:

a) Pond Shore/Shore Slope - Horsetails, Sedges, Coltsfoot

b) Spoil Slope/Hollow - Gray Birch, Trembling Aspen, Downy Golden Rod, Hawkweed, Pearly Everlasting

c) Flat Spoils - Hawkweed, Golden Rod, Clover, Grasses

d) Roadbed/Roadside/Ditch - Common Plantain, Downy Golden Rod, Sedges, Wire Grass, Gray Birch, Rushes, Tickle Grass

The estimated density of groundcover vegetation for the mined land sections varies from 0-73%, with most areas having a value of less than 25%.

MATERIALS AND METHODS

FORESTRY

The 1982 forest inventory maps and the accompanying computer print-outs prepared by the Forest Managment Branch, Department of Natural Resources, were used as a basis for the forest inventory. Together they provided the stand number, location, area, species composition and species origin for each stand.

Field work verified this information and provided facts about average age and height of trees, the degree of stocking, major species, steepness of spoil slopes and the area contoured. Due to insufficient field data, information relating to the vigour and diameter of trees has been excluded from the report.

Materials used to gather this data included a Sunto (clinometer) for estimating spoil pile slope and an increment borer to determine tree age. The remaining data was acquired "by sight", with the exception of stocking, which was done primarily by using aerial photographs. Average values were obtained in all cases.

All area measurements in the context of this report were calculated using forest inventory maps and print-outs, planimeters, or dot grids. It should be noted that the forest inventory maps do not correspond exactly with the 1:10,000 scale orthophoto maps. The maps accompanying this report show both the orthophoto and forest inventory information.

The area of contoured land was derived from aerial photographs and field studies. In some cases, particularily those sites where recontouring was being carried out at the time of the survey (late 1984), the acreages had to be estimated. The acreages for the total size of any mined area excludes roads and transmission lines. Also, lands categorized as "not contoured, not planted, and openly stocked" include areas that show "no signs of tree life, and are non-contoured, and not planted". This latter acreage gives an indication of the lands in each section that are in most need of attention by the Reclamation Committee. Refer to Table A - 5(b).

The forest inventory information is summarized in Table A - 1(b) and includes ten categories. Stand number, stand area (acres), spoil slope (degrees), average tree height (feet) and average tree age (years) are self-explanatory. Other categories which may require explanation include:

Origin: refers to origin of stand species. It may be (a) reforested: stand has been replanted, or (b) natural: stand is regenerating naturally.

Stocking: refers to the percentage of crown closure.

It may be defined as (a) O (open stocking): stand has a crown closure of 0-30%, (b) M (medium): stand has a crown closure of 30-70%, (c) D (dense): stand has a crown closure of 70-100%. Discontinuous or patchy stands were indicated with the symbol P.

Major species: refers to the most abundant species within the stand. Where it was not possible to determine a single species as being most abundant, a group of similar species was used. For example, IH represents intolerant hardwoods. Table A - 1(b) provides a summary of symbols used for major species.

Species Composition: refers to the tree species and their relative abundance in a stand. For example, BL_7, JP_1, RP_1, IH_1 indicates the stand was composed of 70 % Black Locust, 10% Jack Pine, 10% Red Pine, and 10% Intolerant Hardwoods. Table A - 1(b) provides a key to the abbreviations for the various species names, eg. BL, Black Locust.

PONDS

Ponds within the Minto-Chipman strip-mined areas were numbered on 1:10,000 scale maps(orthophotos). Because of the large number of ponds involved, it was decided that not all could be examined during the length of the project. Therefore, it was decided to survey only those with an area in excess of one acre, or stocked by the Department of Natural Resources. These ponds were called "priority ponds".

The study of the priority ponds included measurement of pH using litmus paper or a pH meter, maximum depth (feet) using a sounding chain, and surface temperature (°F)using a thermometer. A search for inlets and outlets was conducted from the canoe and recorded in Table A - 2(a). Some of these channels were of a seasonal nature, whereas others flowed year round. The surface area of the priority ponds was determined by using aerial photographs, 1:10,000 scale maps and a dot grid. Accessibility to a pond site by road, and to a pond's edge was noted as good, fair or poor. Refer to Table A - 2(b) for description of accessibility. The presence of emergent vegetation at the shore, the percentage of the shore vegetated, and the types of vegetation were noted for all of the ponds surveyed. Adjacent slopes were described in terms of percent treed, slope (°) and types of vegetation. The presence of pyrite near ponds was noted, and any utilization of the pond was recorded. All inventory pond numbers were cross-referenced to Department of Natural Resources angling pond numbers and names. For a complete list refer to Table A - 2(c).

Table A - 2(a), "Physical Characteristics of Selected Priority Ponds in the Minto-Chipman Area", notes section and pond number, surface area (acres), maximum depth, pH, temperature, inlet, and outlet. Pond accessibility, a description of adjacent slopes, presence of emergent vegetation and current utilization are described in Table A - 2(b).

STREAMS

All streams in the strip-mined areas near Minto and Chipman were surveyed if they were accessible and could be located on a 1:10,000 scale map. Table A - 3 provides stream data including stream number, stream name (if any), sample location (above or below), date sample was taken, flow (ft^3/sec), pH, temperature (°F), origin of stream (inside or outside) and colour (tea colour, no colour, and/or turbid).

In the field, stream flow was determined by using a flow measuring device (i.e. a fisherman's float on five feet of nylon fishing line) and a yardstick. A complete description of the method used to estimate the flow may be obtained by referring to Robins and Crawford, 1954. The pH of the streams was determined using litmus paper or a pH meter, and temperature (°F) was measured using a thermometer. The colour of the stream was also recorded as tea colour, no colour, and/or turbid. The origin of the stream and sample location were determined by using 1:10,000 scale maps. Stream origin indicates whether the source of the stream was outside or inside mined land, and sample location shows whether the stream was sampled before(above) or after (below) it had passed through strip-mined land. The direction of stream flow is noted on the genaral inventory maps.

SOILS

One hundred soil samples were collected in the strip-mined areas near Minto and Chipman. Each was composed of several sub-samples representing a portion of the mined area. Sub-samples were collected from the top, middle or bottom of spoil slopes. The sub-samples were gathered by using a hand-held garden spade and were taken to a soil depth of six inches. Sub-samples were then mixed to form samples and were stored in labelled sample bags for drying. Later they were passed through a 1.00 mm or 1.41 mm seive and packaged for analysis.

Drainage at sample sites was determined by sight, and slope (°) was estimated by using a Sunto. Soil texture was classified as clay, silt, sand and gravel, and/or rocky. Parent material was recorded as shale and/or sandstone. The quantitative analysis of the soil samples was performed by the Department of Agriculture and included pH, phosphorus (as P205 lbs/acre), potassium (as K20 lbs/acre), calcium (as Ca lbs/acre) and magnesium (as Mg lbs/acre). Refer to Table A - 4(a) for the results of the quantitative analysis.

Table A - 4(b) details the soil sample number, sample site description (top, middle, or bottom of slope), drainage (good, fair, poor), slope at sample site (°), soil texture and parent material.

VEGETATION

Method of Vegetation Analysis

For this project, it was necessary to develop a satisfactory method for vegetation analysis. In Section I of the mined area, the vegetation analysis was basically a trial and error process to determine the best overall approach for the remaining sections.

Initially a walk-around plan was used whereby plants on a transect skirting a pond were tallied as they were located. Vascular plants, mosses and lichens were recorded. Specimens not identified in the field were tagged and identified later. In some cases it was only possible to classify a specimen to genus, but most were taken to species.

It soon became apparent, however, that with the larger ponds, the "walk-around-the-pond" approach was not feasible because of the time involved. This method was modified into a sometimes meandering, sometimes straight transect that usually paralleled a pond. A transect length of about 300-400 feet was chosen with every plant in viewing distance along the transect being recorded, as with the previous "walk-around-the-pond" approach. The habitat of plants was also recorded.

Later, other changes were made to this method, in particular, to those species which were identified, and the manner in which the transect was conducted. It was decided to include all woody plants at or below waist height in order to convey an appreciation of the area's stage of succession. The transect design was further modified as follows:

a) Transects were straight line, not zigzag or meandering.

b) Transects were not necessarily in association with a pond; their location and direction were decided before entering the field; and, whenever possible, a transect would pass through a mined area typical of that section.

c) Transects near ponds ran perpendicular to them, not parallel; this provided a better evaluation of the vegetation of different habitats i.e. shoreline of pond, adjacent slopes, roadside, etc.

d) The width of the transect was narrowed from field of view to armspan. The estimate of groundcover density became a reflection of the density of the vegetation on that transect only.

These changes were implemented for Sections II to V.

The inventory included 113 vegetation transects (for plants under three feet in height) throughout the mined area. The vegetation data collected for vasular and non-vascular plants has been recorded separately in the inventory tables (see appendices).

(1) Vascular Plants

The "common name", "% composition", "frequency encountered", and "habitat" of vascular plants from each transect are recorded in Table B - 1(a). Also noted in this table is the vegetation density (eg. 10-15% vegetated) for each transect. A species list giving the common and scientific names of vascular plants found in the mined region may be found in Table B - 1(b).

The following sources were used to identify vascular plant species:

a) A Field Guide to Trees and Shrubs, Petrides, 1958,
b) A Field Guide to Wildflowers of Northeastern and North-central North America, Peterson and McKenny, 1968,
c) The Flora of Nova Scotia, Roland and Smith, 1969, and
d) An Illustrated Flora of the Northern United States and Canada, Britton and Brown, 1970.

Common and scientific names were taken from Gray's Manual of Botany, Fernald, 1970 and The Flora of Nova Scotia, Roland and Smith, 1969.

The "% composition" was calculated by dividing the number of times a plant species was encountered on a transect by the total number of plants on the transect.

"Frequency encountered" describes the frequency at which plants and plant groups (several individuals of the same species) were encountered. Refer to Table B - 1(c) for the scale used in describing "frequency encountered". By including the frequency of both individual plants and plant groups in one scale, the local abundance or distribution of a species is demonstrated. For example, a group of Sweet-fern plants may be found on a transect. This single group may comprise 80% of the total number of plants on the transect, but, because they were encountered only once along the transect, their "frequency encountered" is considered to be rare. On the other hand, a few Bristly Sarsaparilla plants might comprise only 20 % of the total number of plants within the transect, but, because they were encountered in several places along the transect their "frequency encountered" is considered to be frequent. Therefore, "% composition" and "frequency encountered" provide separate information that, when used together, indicates the extent of grouping shown by certain plant species.

Possible mined land "habitats" for groundcover vegetation include pond shore, shore slope, spoil slope, spoil hollows, flat spoils, road bed, roadside, and road/ditch.

To further describe the habitat, the amount of moisture present is indicated: wet, moist and dry. Shaded habitats were noted as well. Table B - 1(c) presents a list by section of the most common groundcover species associated with a particular habitat.

An estimate of the vegetation density (%) for each section is shown in Table B - 1(d). The average vegetation density for a section was calculated by averaging the vegetation densities for all transects in that section.

Since the vegetation density of a transect is expressed as a range of five percentage points (for example 10-15%), a mid-value (for example 12.5 %), was used in the averaging calculation.

It is recognized that the estimate of vegetation density is a subjective assessment, however, it does indicate the extent to which revegetation has occurred, and allows a comparative description of the sections.

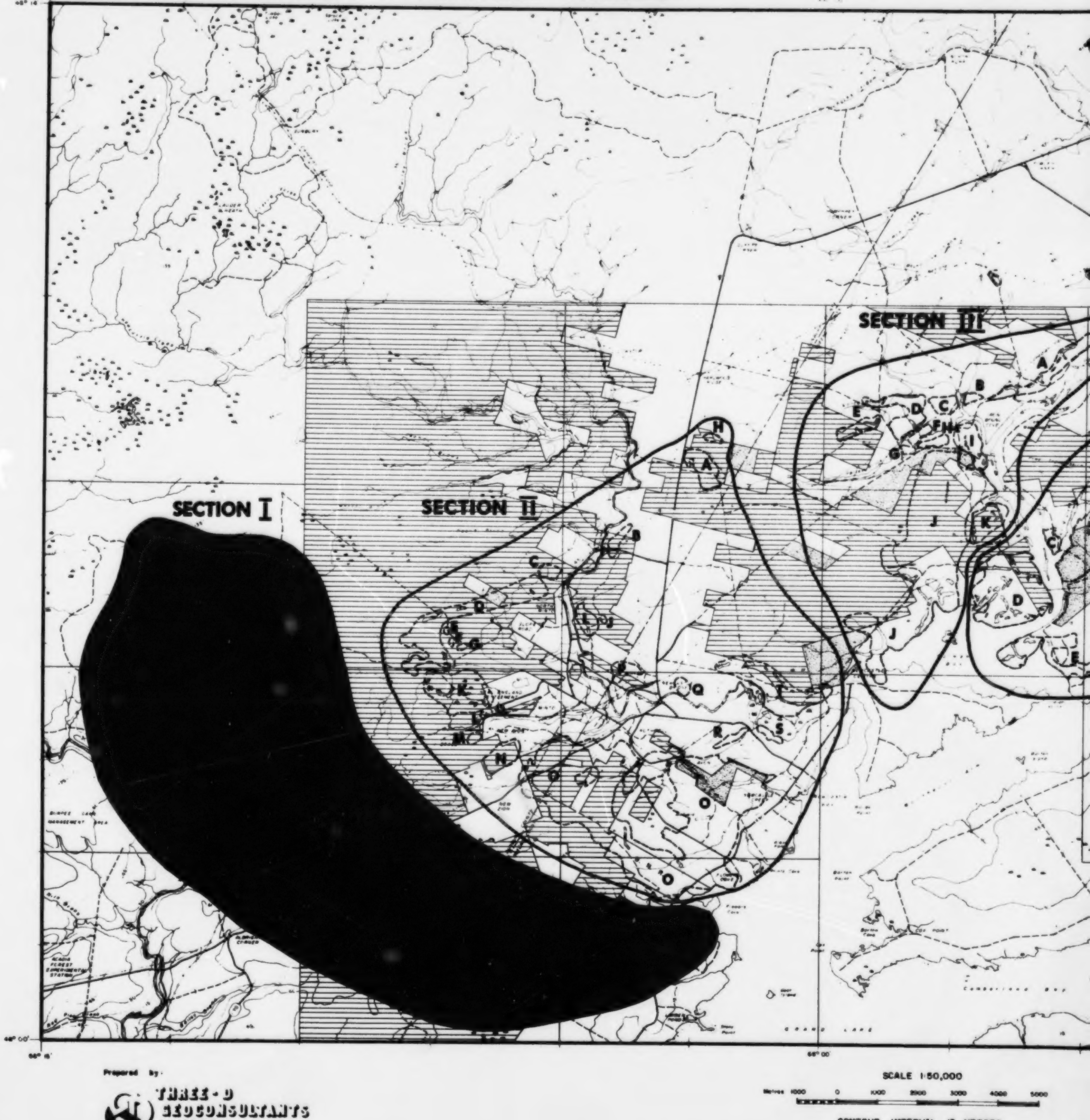
(2) Non-vascular Plants

The "species present", "frequency of encounter", and "habitat" of mosses and lichens are recorded by transect in Tables B - 2(a) and B - 3(a).

"Species present" were identified using How to Know the Lichens, Hale, 1979, and Moss Flora of the Maritime Provinces, Ireland, 1982. Mosses not identified at time of publication were numbered, in order that their proper names could later be incorporated into the report. Refer to Table B - 3(b) for a list of mosses that have been identified, and to Table B - 3(c) for a list of unidentified mosses. Table B - 2(b) is a list of lichen species found in the mined area.

"Frequency of encounter" and "habitat" data for mosses and lichens is organized in a manner similar to that for vascular plants. For crustose and foliose lichens, the colony size was the average size of individual lichens. The colony size for fruticose lichens, however, was the average size of a group of lichens, because of their small size and tendency to clump into groups. In cases where fruticose lichens were not grouped, the term "scattered individuals" was used.

MINTO - CHIPMAN MINED LANDS INVENTORY PROJECT


SECTION I
SECTION II
SECTION III
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
G R A N D   L A K E
Cumberland Bay
66° 15'
66° 00'
46° 00'

Prepared by:

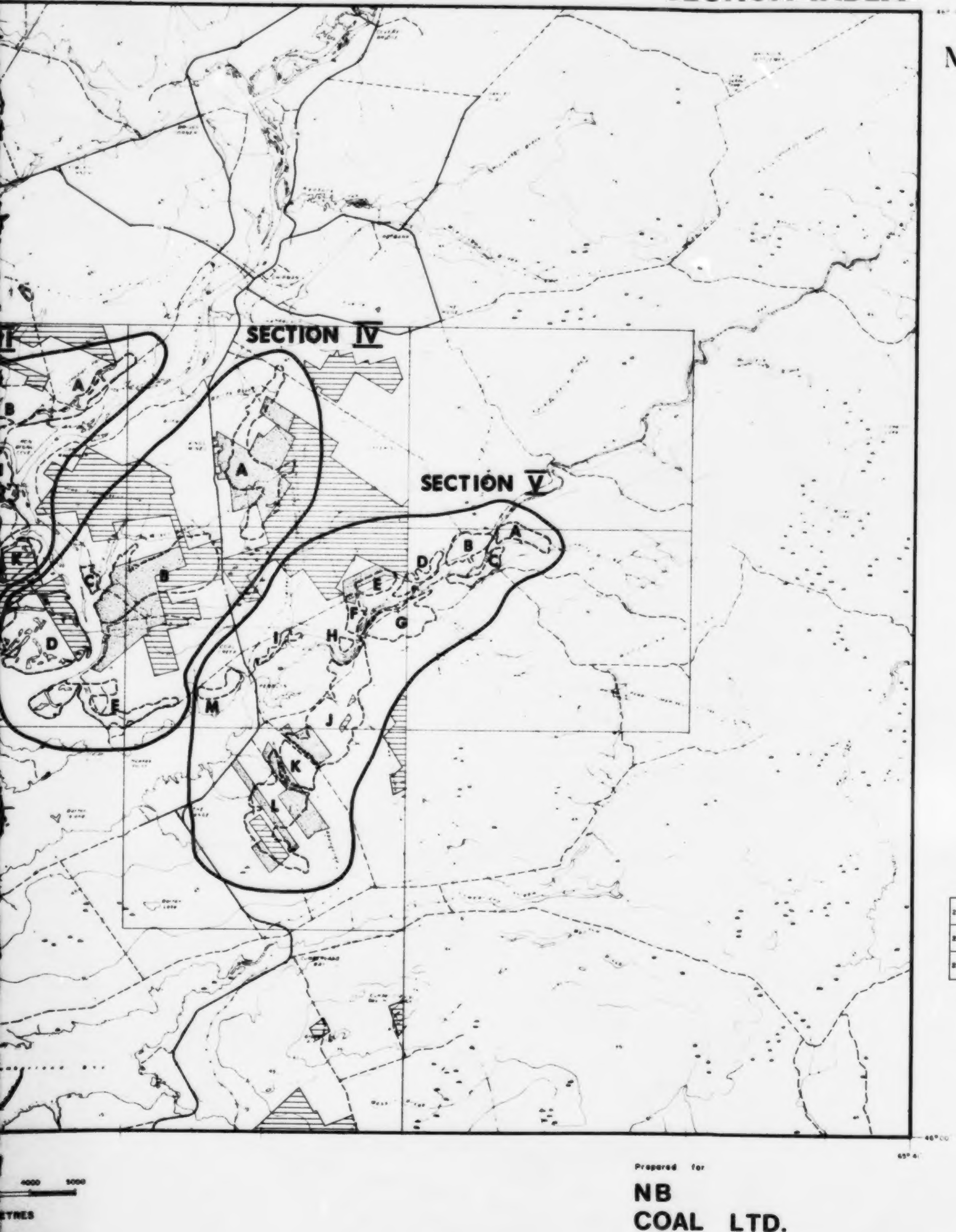
THREE-D GEOCONSULTANTS LIMITED

SCALE 1:50,000

Metres 1000 0 1000 2000 3000 4000 5000

CONTOUR INTERVAL 15 METRES
(ERROR OF -15%)

SECTION INDEX



MINING LICENCE
No: 1307

—LEGEND—

- Main roads
- Secondary roads and trails
- Railway
- Power transmission line
- Lake or pond
- Rivers and streams
- Wetland
- Topographic contours (note For the sake of simplified representation, the values converted to the metric system are 16 % below their actual values)
- Section boundary
- H Mined area index
- ☐ Private property
- ▤ Crown land
- ▨ N.B. Coal property
- Area disturbed by Strip Mining

1:10,000 Topography (Ortho) Index

	21 J/01 W3	21 J/01 W4	21 I/04 U3	21 I/04 U4	21 I/04 V3
21 J/01 V2	21 J/01 W1	21 J/01 W2	21 I/04 U1	21 I/04 U2	21 I/04 V1
21 J/01 S4	21 J/01 T3	21 J/01 T4		21 I/04 R4	
21 J/01 S2	21 J/01 T1	21 J/01 T2			

Prepared for

NB
COAL LTD.

SECTION I A : EIGHTEEN BROOK NORTH MINE

GENERAL DESCRIPTION

The Eighteen Brook North Mine is approximately 729 acres is size, and is located about five miles north of Albrights Corner. The N. B. Coal Limited 500 W dragline and 7400 dragline began mining the northern portion of this site sometime after 1977. This portion consists of 323 acres. The southern portion of the mine site is 406 acres in size and was mined betweeen 1940 and 1969 by the Fitton Company and later by the Miramichi Lumber Company.

The area is accessible by three dirt roads, however, only one is in good condition. This road proceeds north from Highway 10 directly to the section. Generally roads within the area are in fair to good condition. The Eighteen Brook North Mine, located four and a half miles outside the Minto village limits, is Crown land. The nearest permanent dwellings are about four miles away in the New England Settlement area. The older portion has been partially reforested with pine and, in some areas, appears park-like.

FORESTRY

Section I A has a total land area of 695 acres, none of which is contoured. Three hundred and eighty acres are forested, and 315 acres have no tree life. Of the forested land, 374 acres are planted with Jack Pine and Black Locust, and six acres are regenerating naturally. Three hundred and twenty one acres are "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 39° and an average height of 20 feet.

PONDS

In the Eighteen Brook North Mine, fourteen of the twenty-five priority ponds were tested. The ponds that were not tested were inaccessible (#24) or in the active mine site (#'s 55, 60, 61, 62, 65, 67, 72, 73, 74, 75). The priority ponds tested have a pH range of 4.0 to 8.1 and depths ranging from 5 to 52 feet. Accessibility to ponds #4, #11, #17, #18, #38, #57, and #81 is generally good. The remainder of the priority ponds surveyed, #1, #2, #7, #9, #12, #13 and #49, either have poor roads or steep shore slopes.

Most shore slopes are approximately 30°, although some of the highwall ponds have 90° slopes on one shore. These highwall ponds are #2, #11, #17, #18, and #49. The maximum depth of these ponds ranges from 13 feet to 52 feet, while the height from the top of the adjacent highwall slopes to the water is from 10 feet to 40 feet.

Ducks and signs of beaver and muskrat were observed in two of the ponds (#9 and #18). One pond (#57) has been used as a garbage dump.

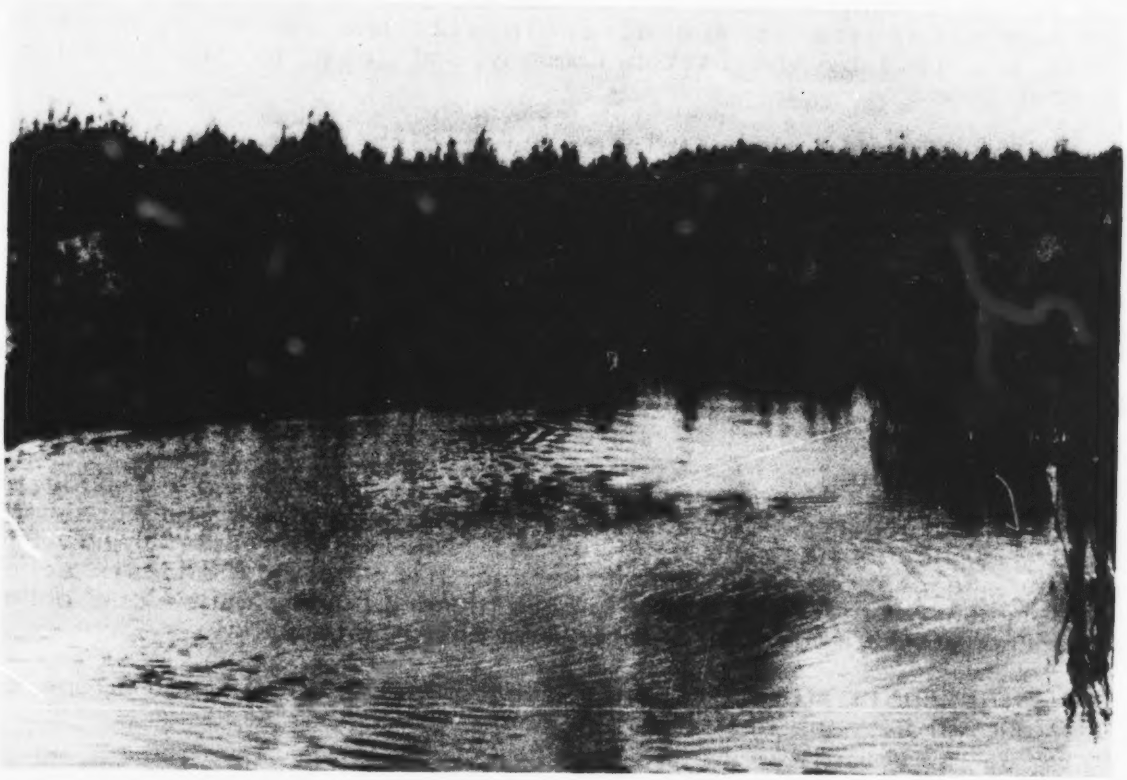


Figure 1 - Older portion of Section I A - The emergent vegetation at the shore of this pond provides habitat for ducks. In the background note the planted, non-contoured spoil piles, and the extent of revegetation that has occurred.

STREAMS

In the Eighteen Brook North Mine, four streams were tested, three of which are branches of Eighteen Brook. The pH of these streams ranged from 4.5 to 6.5 while the flow was from 0.05 to 4.76 ft^3/sec. All four streams were tested in June, 1984.

SOILS

Four soil samples were collected from the Eighteen Brook

North Mine. The pH's ranged from 4.5 to 4.9. The soil analysis showed low to very low levels of phosphorus, low to medium levels of potassium, low to medium levels of calcium, and medium levels of magnesium. The dominant parent material in this section is shale with some sandstone. The dominant soil texture is clay with some silt and sand.

VEGETATION

Vascular Plants

Twelve transects were completed in this section. The vegetation density ranged from 0-5% to 60-65% with the average being 13%. Thirty-seven species were identified from this area.

Non-Vascular Plants (Lichens)

Four species of lichen were identified from this section. Cladonia cristatella was the most abundant lichen species.

SECTION I B : EIGHTEEN BROOK SOUTH MINE

GENERAL DESCRIPTION

The Eighteen Brook South Mine is approximately 114 acres in size and is located about two miles north of Albrights Corner. The area is four miles outside the Minto village limits. A dirt road in good condition allows easy access to the site. The nearest permanent dwellings are at Albrights Corner about two miles away.

This area was mined by Avon Coal Ltd. between 1955 and 1960, and by Knox Contracting Ltd. between 1971 and 1982. It is Crown land with a barren appearance.

FORESTRY

Section I B has a total land area of 110 acres. This area has been contoured recently and has no tree life.

The average slope of the spoil piles in this section is 10°.

PONDS

Section I B has one priority pond (#83). This pond is 26 feet deep, has a pH of 6.0 and is a highwall pond. The pond has a 90° shore slope on one side, and 30° on the other. The adjacent highwall bank rises 15 feet above the water. It may be noted that some dumping has occurred at this pond.

STREAMS

In the Eighteen Brook South Mine only one stream, Eighteen Brook, was sampled. Eighteen Brook runs along the southern border of the mined site. It had a pH of 7.0 and a flow of 11.14 ft^3/sec in September, 1984.

SOILS

In Section I B, one soil sample was collected. It had a pH of 4.0, and contained low in levels of potassium and calcium, very low levels of phosphorus and medium levels of magnesium. The dominant parent material for this region is conglomerate sandstone. The soil texture is predominantly sandy.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density ranged from 0-5% with seventeen species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this area.

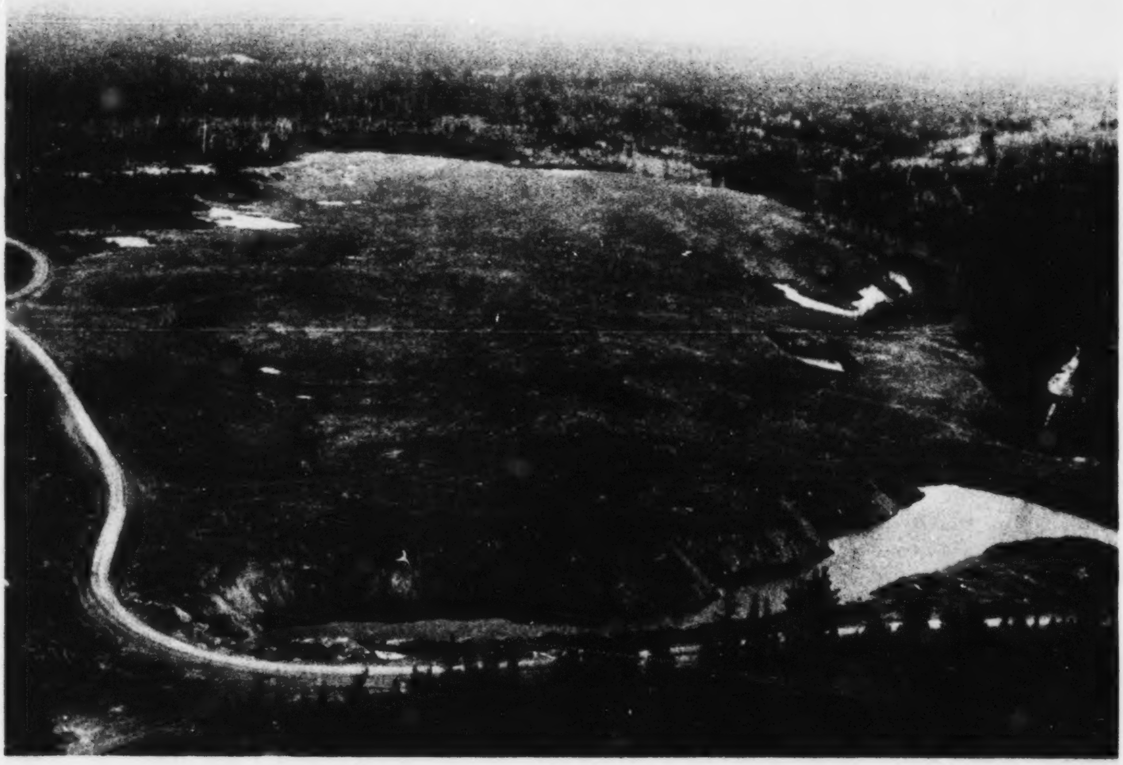


Figure 2 - Aerial view of Section I B - This area was recontoured during 1984. Note pond # 83 in the foreground, and Eighteen Brook to the right of the photograph.

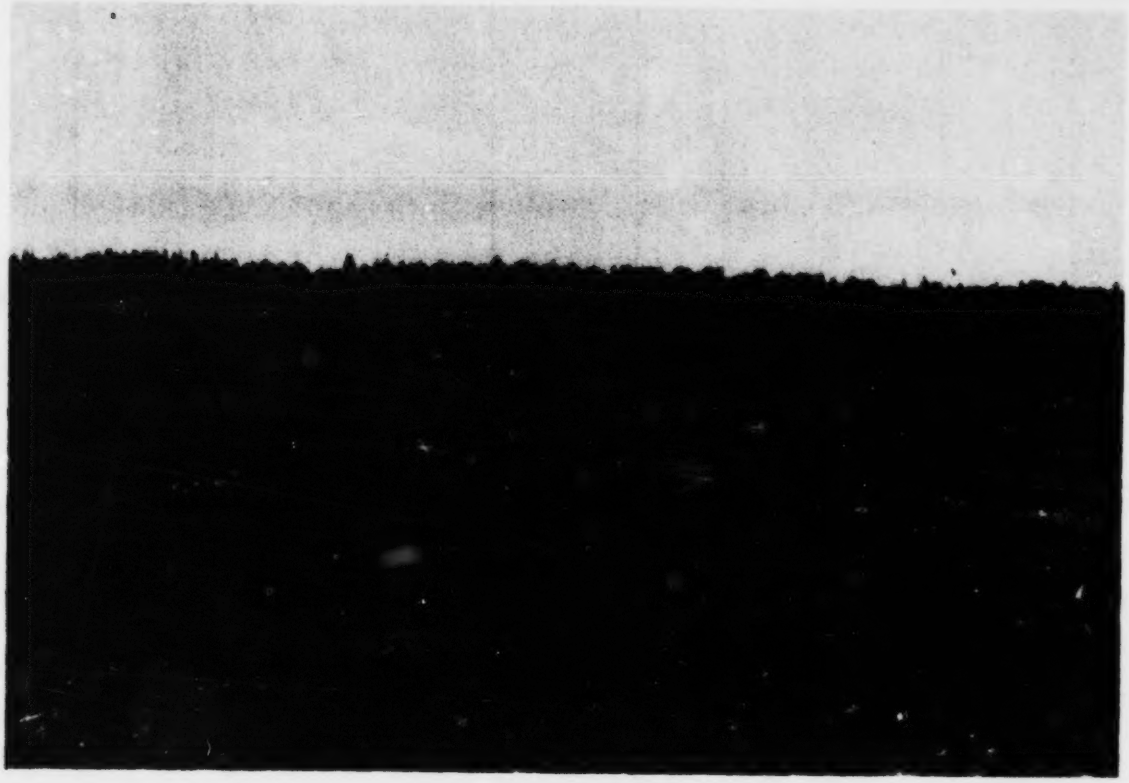


Figure 3 - Ragwort was one of the first species to become established in Section I B after it was recontoured.

SECTION I C : WILDCAT BROOK MINE

GENERAL DESCRIPTION

The Wildcat Brook Mine is 249 acres in size and was mined between 1975 and 1982 by N. B. Coal Ltd. This area, located about three miles southwest of Minto village limits, is fairly remote. The nearest permanent dwellings are about two miles away along Highway 10. A dirt road, in good condition, proceeds north from Highway 10 and leads directly into the area. The entire section is Crown land.

FORESTRY

Section I C has a total land area of 233 acres. All of this area has been contoured except for the slopes along the highwall. Seventy five acres are forested and 158 acres have no tree life. All of the forested land has been planted with Jack Pine.

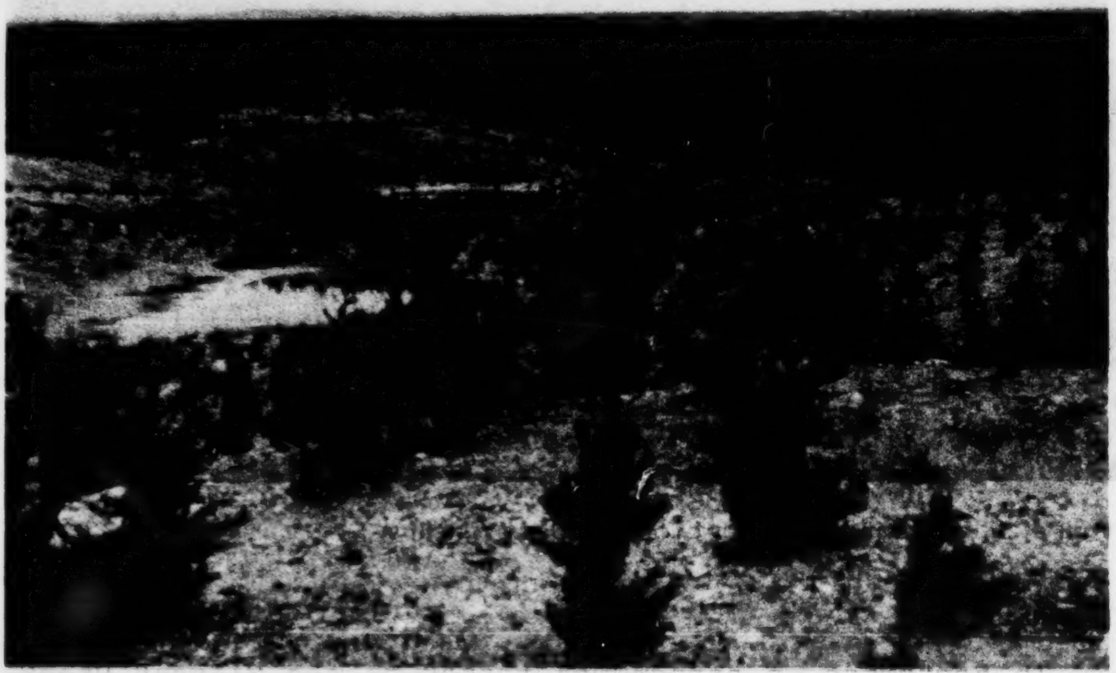


Figure 4 - Most of Section I C has been recontoured, and approximately 75 acres have been planted with Jack Pine.

The average slope of the spoil piles in this section is 12°.

PONDS

At the Wildcat Brook Mine, four priority ponds were tested. They were found to have pH's ranging from 3.5 to 6.0, depths ranging from 17 to 35 feet and shore slopes averaging at 40°. Accessibility to all of these ponds is fair to good. Pond #92 is a highwall pond with 90° slopes on one side and 50° slopes on the other. The depth of the pond was 30 feet; the height of the highwall above the water level was 45 feet.

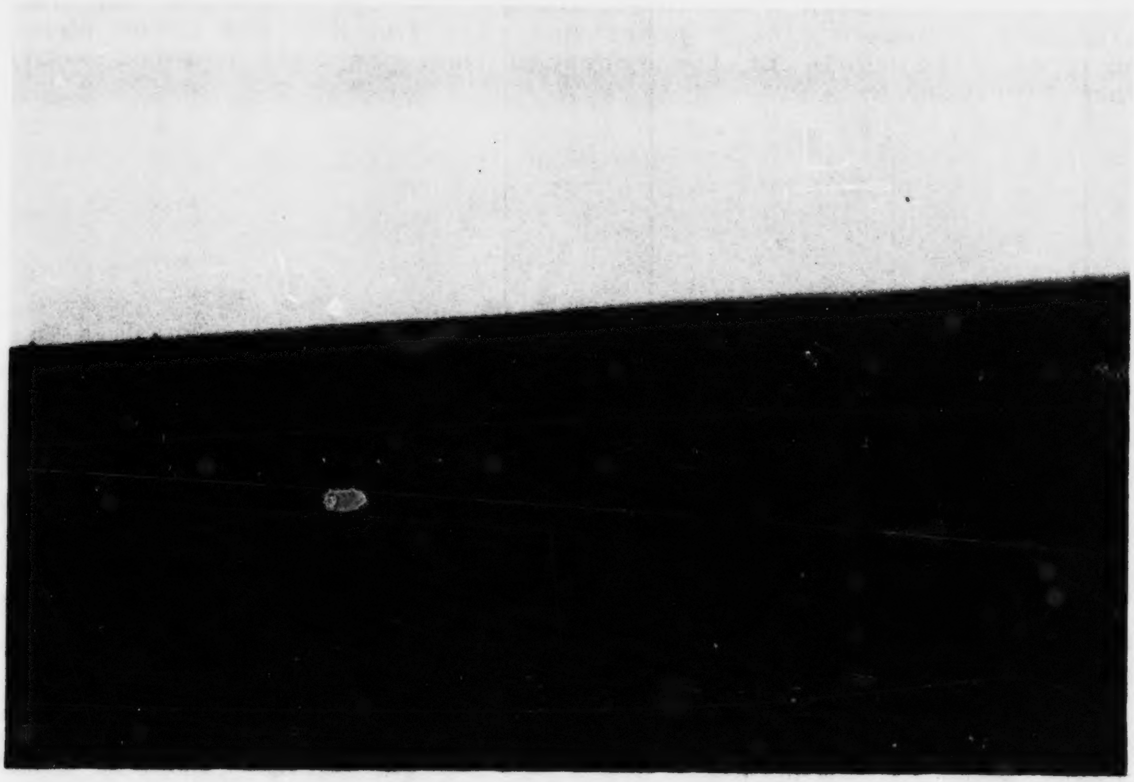


Figure 5 - Planted proportion of Section I A

STREAMS

In September, a stream was tested at the Wildcat Brook Mine. This stream, a branch of Fulton Brook, was found to have a flow of 1.10 ft3/sec and a pH of 6.0.

SOILS

One soil sample was collected from the Wildcat Brook Mine. Analysis showed a pH of 4.7, very low levels of phosphorus, low levels of potassium, medium levels of calcium and high levels of magnesium. The dominant parent material in this area is sandstone and the dominant soil texture is sand.

VEGETATION

Vascular Plants

Three transects were completed in this section. The vegetation density was 0-5% with nineteen species being identified.

Non-Vascular Plants (Lichens)

One species of lichen, *Cladina rangiferina*, was identified from the transects in this section.

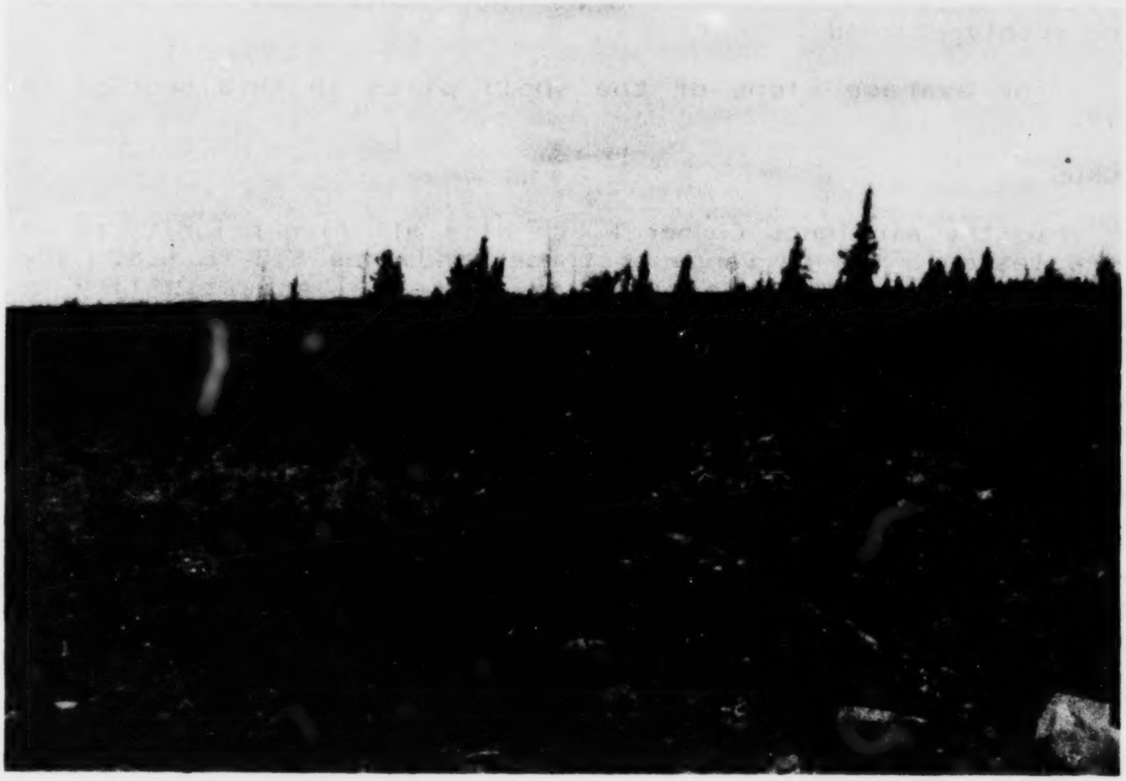


Figure 6 - A small part of the Wildcat Brook Mine has regenerated naturally with gray birch.

SECTION I D : ALBRIGHTS CORNER NORTH MINE

GENERAL DESCRIPTION

The Albrights Corner North Mine is 101 acres in size and is located just east of Albrights Corner. A small part of the east end of this site was mined in the 1960's, but most of the section was mined between 1974 and 1982 by Knox Contracting Ltd. (for N. B. Coal Ltd.). Generally, this site appears quite barren and flat, although some revegetation and reforestation has been carried out. Access to this mine site is good with the area being visible from Highway 10.

The Minto village limits are about three miles away while the nearest permanent dwellings are about a mile away in Albrights Corner. The entire section is Crown land.

FORESTRY

Section I D has a total land area of 99 acres, of which 84 acres are contoured. Thirty two acres are forested and 67 acres have no tree life. Of the forested land, 17 acres are planted with Jack Pine and 15 acres are regenerating naturally. Fifteen acres are designated as "non-contoured, not planted and openly stocked".

The average slope of the spoil piles in this section is 11°.

PONDS

In the Albrights Corner North Mine all five priority ponds were tested. The pH range of these ponds was 5.0 to 6.5. The maximum depths ranged from 11 to 46 feet. Accessibility to all five ponds is fair to good both by road and to pond shores. The average slope of pond banks is 16°. No highwall ponds are present and three ponds have been contoured to their edges. No obvious signs of pond use were observed although an abandoned crane was left near pond #105.

SOILS

One soil sample was gathered at the Albrights Corner North Mine. Analysis revealed a pH of 4.4, very low levels of phosphorus, low levels of potassium, medium levels of calcium and high levels of magnesium. The dominant parent material is sandstone with some minor shale apparent whereas the dominant soil texture is sand with some clay.

VEGETATION

Vascular Plants

Five transects were completed in this section. The vegetation density ranged from 0-5% to 80-85% with the average being 32%. Twenty six species were identified from this area.

Non-Vascular Plants (Lichens)

One species of lichen, Baeomyces fungoides, was identified from the transects in this section.

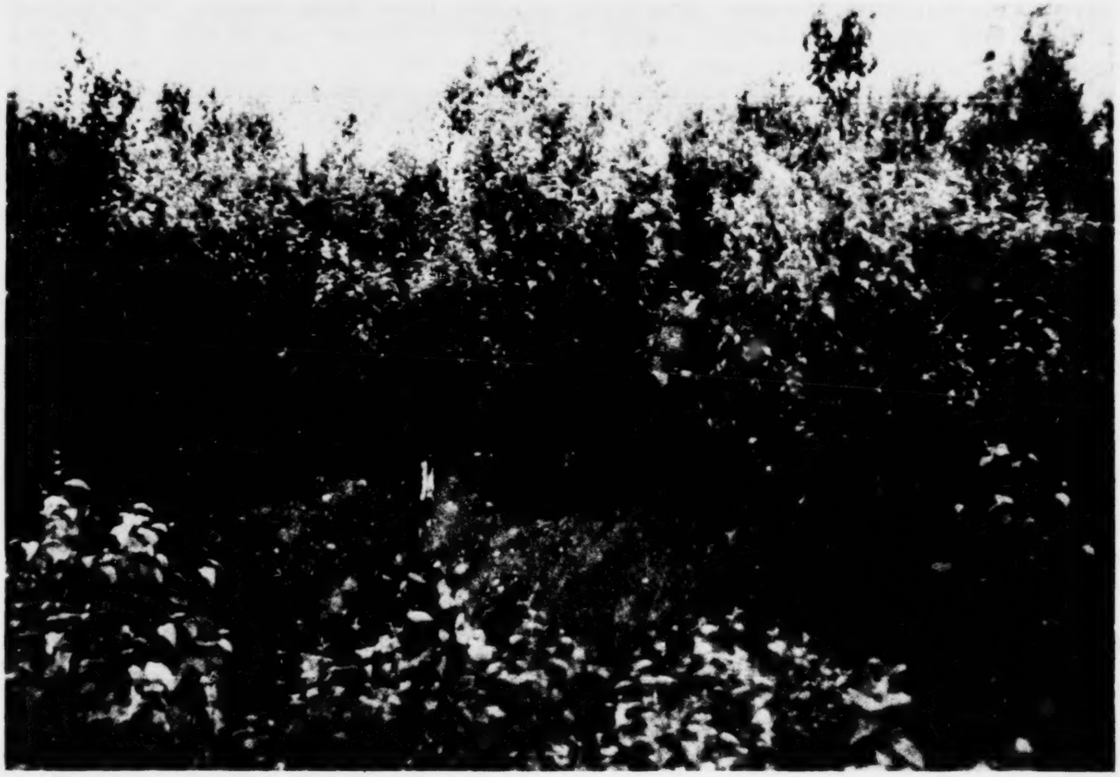


Figure 7 - In many of the mined areas, naturally regenerating tree species, like gray birch, have grown better than the planted trees.

SECTION I E : KING ROAD/LITTLE RIVER MINE

GENERAL DESCRIPTION

The King Road/Little River Mine is approximately 1826 acres in size and was mined between 1948 and 1975 by the Avon Coal Company and N. B. Coal Ltd.

The area is situated between Highways 10 and 690, and is approximately four miles outside of Minto's village limits. The nearest houses are about two miles away along Route 690.

The oldest part of Section I E is the northern portion. This area is bordered by several swamps, and contains many angling ponds. It is parklike in appearance. The eastern portion of Section I E is slightly newer and is less heavily vegetated. This region has fewer angling ponds but has been reforested with pine to a greater extent than the northern region. The southern and western portions are the most recently mined areas of Section I E. The western area in particular, is scantily vegetated and is characterized by steep highwall ponds.

Four dirt roads provide access to this section. Three of these originate from Highway 10, the other from Highway 690. The latter provides the best access although its condition quickly deteriorates when wet. The others were impassable, except with a four-wheel drive vehicle, due largely to one or two "bad spots" such as washed out culverts, rather than the general condition of the road.

Section I E is primarily Crown land, however, about 140 acres in the south eastern tip are privately owned by five individuals.

Current use of the area is largely recreation oriented. Many of the angling ponds are used by local fisherman and the area is hunted during the fall.

FORESTRY

Section I E has a total land area of 1731 acres, of which 28 acres are contoured. One thousand and twenty seven acres are forested; four acres have no tree life. Of the forested land, 1002 acres are planted with Red Pine, Jack Pine, Black Locust and Norway Spruce, and 725 acres are regenerating naturally. Approximately 446 acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 29o and an average height of 20 feet.

PONDS

There were 35 priority ponds in the King Road/Little River Mine, 23 of which were tested. An additional four ponds were surveyed due to the fact that they were Department of Natural Resources angling ponds. The remaining priority ponds were inaccessible and were not tested. From the 27 ponds tested, a pH range of 5.0 to 7.5 was recorded. Access to these ponds was either good to fair (pond #'s 137, 162, 168, 178, 180, 206-212, 215, 217, 219, 228, 237, 239, 270, 272, 295, and 300) or poor (pond #'s 205, 243, 247, 296, and 299). The average slope for pond banks was 25o. Ponds in this section were used primarily for angling but signs of ducks and beaver were also observed.

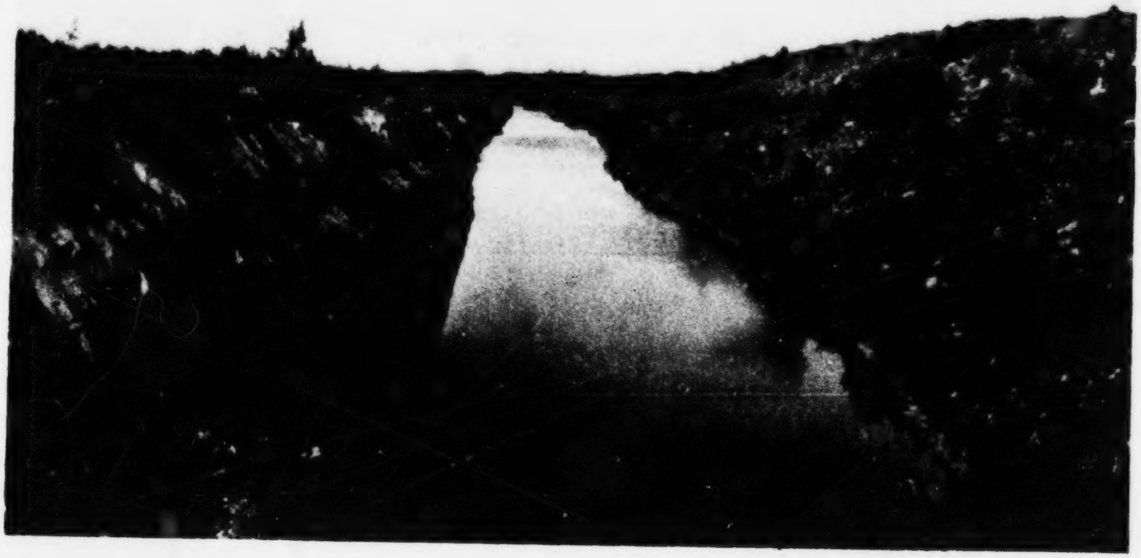


Figure 8 - Highwall pond in Section I E - Note the steep slope on the left and the 45o slope on the right.

There were four highwall ponds in this area (#'s 270, 272, 295, and 299), all of which had a shore slope of 45o on one side and 90o on the other. The range of highwall heights above the water varied from 30 to 50 feet. On the other hand, the pond depths for these highwall ponds ranged from 9 to 22 feet.

STREAMS

Three streams were surveyed in this section including Grand Lake Little River and some of its tributaries (see general inventory maps for site location). The pH's of the streams ranged from 5.5 to 7.0 ; the flows ranged from 0.54 ft^3/sec to 11.35 ft^3/sec. Although the samples were taken in different months (July and September) the large difference in stream flow is due primarily to sample location.

SOILS

In the King Road/Little River Mine, seven soil samples were collected. Analysis showed pH's ranging from 4.2 to 4.9, very low levels of phosphorus, low levels of potassium, and very low to high levels of calcium and magnesium. The dominant soil texture for this area varies from sand to silt while the parent material is predominantly sandstone with some shale present.

VEGETATION

Vascular Plants

Twenty one transects were completed in this section. The vegetation density ranged from 0-5% to 95-100% with the average being 47%. Seventy two species were identified from this area.

Non-Vascular Plants (Lichens)

Fourteen lichen species were identified from the transects in this section. Cladonia verticellata was the most abundant.

SECTION I F : WUHR'S BEACH MINE

GENERAL DESCRIPTION

The Wuhr's Beach Mine is approximately 23 acres in size and was mined during the 1950's. The area is located just south of Flowers Cove and is approximately four miles outside of the Minto village limits. The nearest houses are located about one mile away on the Wuhr's Beach Road.

A dirt road leading from the Wuhr's Beach Road provides access to the southern part of the section. No access by road is possible to the rest of the section, unless by four-wheel drive vehicle.

Section I F is owned by N. B. Coal Ltd. and one individual. Current use of the area is largely recreation oriented with angling ponds being used by local fishermen.

FORESTRY

Section I F has a total land area of 20 acres, none of which is contoured. All of this area is forested, and is regenerating naturally as no planting has taken place. Twenty acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 10° and an average height of 15 feet.

PONDS

Three priority ponds in Section I F were tested. The pH's ranged from 6.5 to 7.0, while the maximum depths ranged from 8 to 23 feet. The shore slopes averaged about 25°. No highwall ponds are present in this section.

Accessibility to these three priority ponds was considered good. All three were angling ponds.

SOILS

One soil sample was collected from the Wuhr's Beach Mine. Analysis showed the soil to have a pH of 4.2, low levels of phosphorus and potassium, very low levels of calcium, and medium levels of magnesium. The dominant parent material for this area was feldspathic sandstone and the soil texture was predominantly sandy with some clay.

VEGETATION

Vascular Plants

Three transects were completed in this section. The vegetation density ranged from 70-75% to 80-85% with the average being 78 %. Thirty species were identified from this area.

Non-Vascular Plants (Lichens)

Four lichens were identified from the transects in this section. Palmia salcotta and Baeomyces fungoides were the most abundant lichen species.

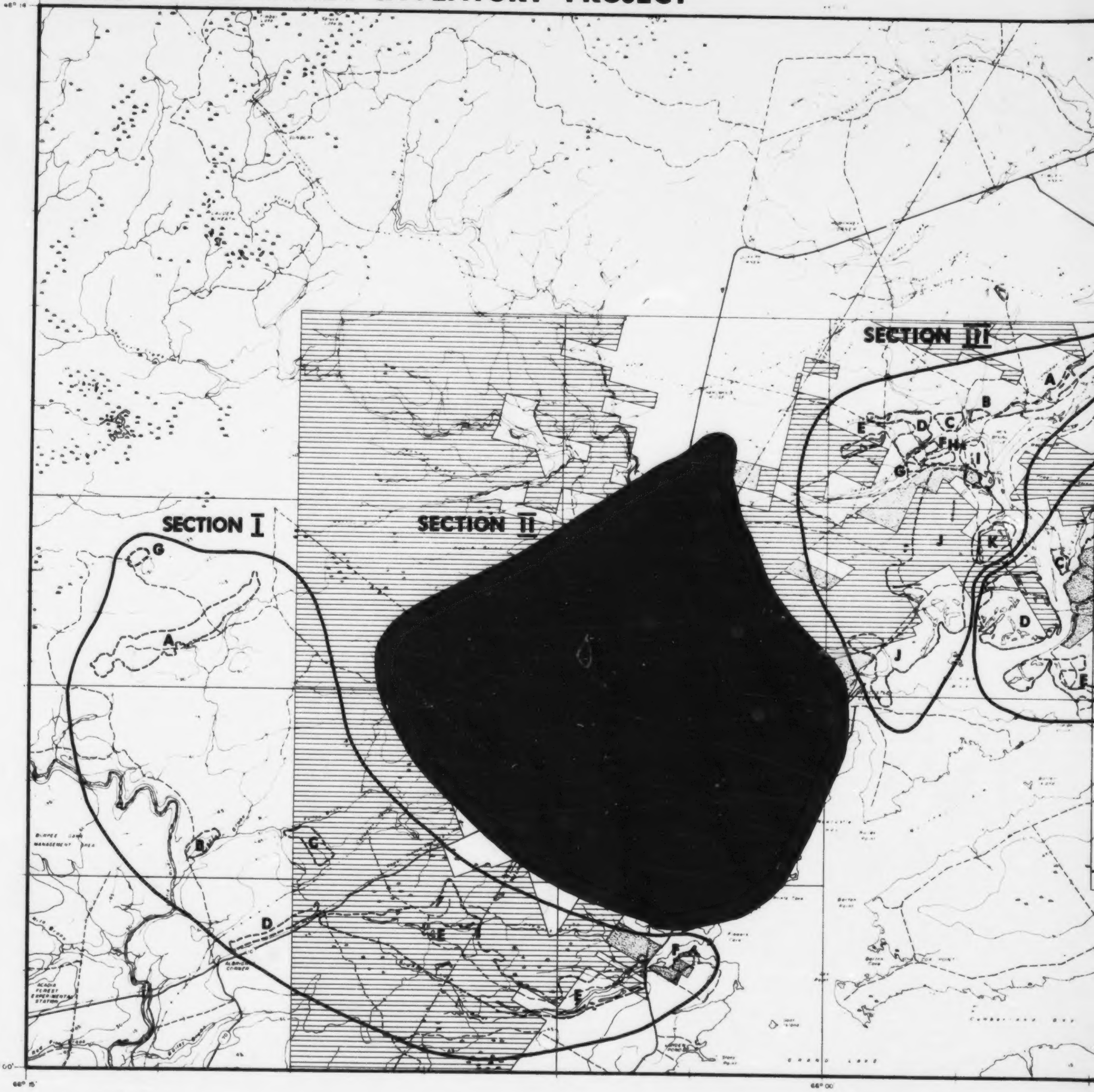
SECTION I G : FIRE ROAD MINE

GENERAL DESCRIPTION

The Fire Road Mine is approximately 31 acres in size and has been mined by N. B. Coal Ltd. since 1983. Located about a mile north of the Eighteen Brook North Mine, the area is fairly isolated being five miles outside the Minto village limits. The nearest houses are those of the New England Settlement about four miles away. This area is entirely Crown land.

Access to this section is provided by two dirt roads both of which originate from Highway 10. The first of these begins at Albrights Corner and parallels Little River. This road is in fair condition because it is partially washed away. The second and better of the two roads starts across from the King Road Mine Area and proceeds north through the Eighteen Brook North Mine before entering Section I G. One branch of this road leads to the New England Settlement. Access to the area is good as these roads are well maintained.

MINTO - CHIPMAN MINED LANDS INVENTORY PROJECT


SECTION I
SECTION II
SECTION III
A
B
C
D
E
F
G
H
I
J
K
BURPEE GAME MANAGEMENT AREA
ACADIA FOREST EXPERIMENTAL STATION
GRAND LAKE
Cumberland Bay
46° 00'
66° 15'
66° 00'

Prepared by:

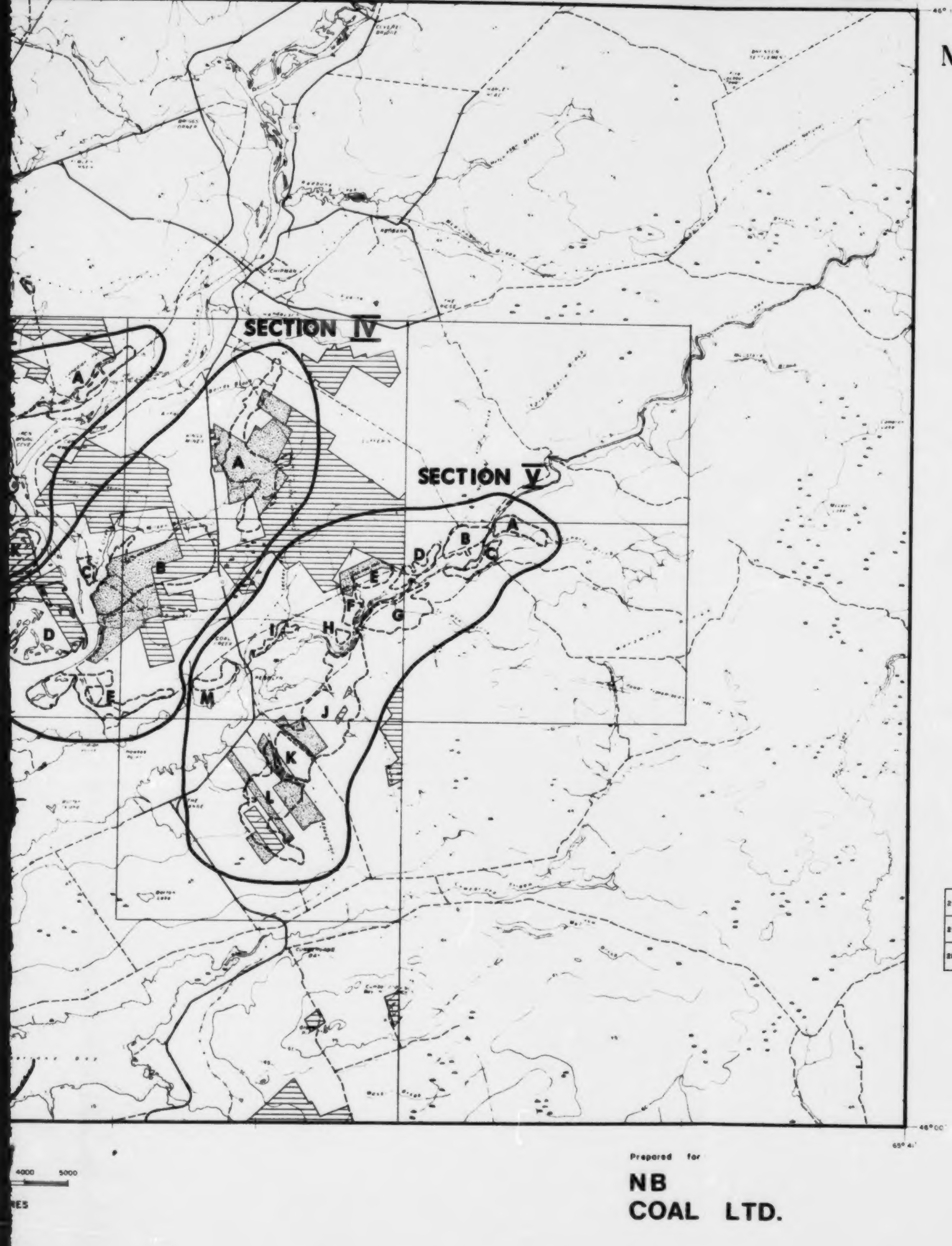
THREE - D
GEOCONSULTANTS
LIMITED

SCALE 1:50,000

Metres 1000 0 1000 2000 3000 4000 5000

CONTOUR INTERVAL 15 METRES
(ERROR OF ~16%)

SECTION INDEX


65° 4'
46° 14'
SECTION IV
A
A
B
C
D
E
K
SECTION V
A
B
C
D
E
F
G
H
I
J
K
L
M
CHIPMAN
46°00'
65° 41'
4000
5000
RES

MINING LICENCE
No: 1307

—LEGEND—

———	Main roads
- - - - -	Secondary roads and trails
· · · · ·	Railway
·—·—·	Power transmission line
◯	Lake or pond
〰	Rivers and streams
⁓	Wetland
—	Topographic contours (note For the sake of simplified representation, the values converted to the metric system are 16 % below their actual values)
▬	Section boundary
H◌	Mined area index
☐	Private property
▤	Crown land
▨	N.B. Coal property
◌	Area disturbed by Strip Mining

1:10,000 Topography (Ortho) Index

	21 J/01 W3	21 J/01 W4	21 I/04 U3	21 I/04 U4	21 I/04 V3
21 J/01 V2	21 J/01 W1	21 J/01 W2	21 I/04 U1	21 I/04 U2	21 I/04 V1
21 J/01 S4	21 J/01 T3	21 J/01 T4		21 I/04 R4	
21 J/01 S2	21 J/01 T1	21 J/01 T2			

Prepared for

NB
COAL LTD.

SECTION II A: HARDWOOD RIDGE HEATH MINE

GENERAL DESCRIPTION

The Hardwood Ridge Heath Mine is 157 acres in size and was mined between 1952 and 1959 by the Miramichi Lumber Company.

This mine is approximately one mile north of the Minto village limits on Highway 10. Access to this area is good due to its proximity to the highway but it is generally not visible from the road. Although several homes are near this section, the mine is entirely Crown land.

The mine appears barren due to recent recontouring. Roads on the site are quite good.

FORESTRY

Section II A has a total land area of 150 acres, all of which is contoured. This area has no tree life.

The average slope of the spoil piles in this section is 15°.

PONDS

In Section II A, one pond(#307) was designated as a priority pond. It had a pH of 4.0 and a maximum depth of 26 feet. This is a highwall pond with 20° slopes on one side and 90° slopes on the other.

The overall accessibility to the pond is good. The height of the highwall is about five feet. This pond had been used as a garbage dump to some extent.

SOILS

One soil sample was collected in the Hardwood Ridge Heath Mine. Analysis revealed a pH of 4.3, and very low levels of all nutrients tested including phosphorus, potassium, calcium and magnesium. The dominant parent material for this area is sandstone. The soil texture is predominantly sandy and rocky.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with ten species being identified.

Non-Vascular Plants (Lichens)

One species of lichen, Stereocaulon paschale, was identified from the transect in this section.

SECTION II B: NORTHSIDE DRIVE/HEATH MINE

GENERAL DESCRIPTION

The Northside Drive/Heath Mine is 148 acres is size and is approximately one-third Crown land. The remainder is owned privately by two individuals.

This mine has two parts. One portion is older, mined between 1965 and 1972; the other portion, to the north, is presently mined by Knox Contracting Ltd. (for N. B. Coal Ltd.).

This section is bordered on the eastern side by Highway 10 and on the southern side by Northside Drive. Both roads are in good condition. The northern portion of the section is outside the Minto village limits, while the southern portion is inside the limits. There are homes on Northside Drive and Highway 10 that are within one quarter mile of the mine.

A park site has been proposed for the southern part of this section near Newcastle Creek. This area is also the site for some dumping of garbage and wood chips.

FORESTRY

Section II B has a total land area of 148 acres, of which 32 acres are contoured. Thirty six acres are forested, and 112 acres have no tree life. The forested land is regenerating naturally as no planting has taken place. Approximately 116 acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 24° and an average height of 30 feet.

PONDS

One pond in Section II B was designated as a priority pond but it was inaccessible.

SOILS

One soil sample was collected for the Northside Drive/ Heath Mine. Analysis of the sample revealed a pH of 4.6, medium levels of phosphorus, low levels of potassium and magnesium, and very low levels of calcium. The dominant soil texture for this region is sandy and rocky. The parent material was determined to be predominantly sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 10 to 15% with thirteen species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II C: NORTH MINTO MINE

GENERAL DESCRIPTION

The North Minto Mine is 28 acres in size and is Crown land. Information concerning the years this area was mined is unavailable.

A road, in good condition, leads to this section. It is a gravel road heading west off Northside Drive. There are no roads actually in this section. Once on the site, travel is possible on foot only.

This mine is inside Minto village limits, and is situated in North Minto. It is within one half mile of permanent dwellings.

FORESTRY

Section II C has a total land area of 26 acres, none of which is contoured. All of Section II C is naturally regenerating forest as no planting has taken place.

The spoil piles in this section have an average slope of 30° and an average height of 25 feet.

PONDS

There were two priority ponds in this section but both were inaccessible by road.

SOILS

One soil sample was collected from the North Minto Mine. Analysis showed soil to have a pH of 4.8, very low levels of phosphorus and potassium, and low levels of calcium and magnesium. The dominant soil texture for the area is sandy and rocky while the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with nine species being identified.

Non-Vascular Plants (Lichens)

Seven lichens were identified from the transects in this section. Stereocaulon tomentosum and Stereocaulon paschale were the most abundant species. Crustose lichens were also abundant.

SECTION II D: SLOPE ROAD/NORTH MINTO MINE

GENERAL DESCRIPTION

The Slope Road/North Minto Mine is 603 acres in size. Some early shaft mining occurred in this section, but most of the area has been disturbed by strip-mining. The northern portion of this section was mined in the 1970's and is more recent than the southern portion. The date the southern portion was mined is unknown.

This section can be reached in three ways:

(1) Slope Road (off Northside Drive) extends into the mine site;

(2) New England Settlement Road passes first through Section II K then enters II D; and

(3) A gravel road heads west off the northern end of Northside Drive and enters the northern part of Section II D.

Section II D is less than a quarter mile north-west of the Minto village limits. There are homes on Northside Drive within one half mile of the site. This section is Crown land except for 32 acres which are privately owned by one individual.

FORESTRY

Section II D has a total land area of 522 acres, of which 40 acres are contoured. Three hundred and thirty one acres are forested; 191 acres have no tree life. Of the forested land, 133 acres are planted with Softwoods and Black Locust, and 198 acres are regenerating naturally. Approximately 349 acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 24° and an average height of 35 feet.

PONDS

Six of the twelve priority ponds in this section were tested. Those not tested were either inacessible or had dried up during the summer. The pH's of these ponds ranged from 3.0 to 7.0, while the maximum depths ranged from 13 to 30 feet. Accessibility to all six ponds was fair to good with the average slope of pond banks being 40o.

Two of the ponds tested, #319 and #326, were highwall ponds. Generally, their banks have one side with a slope of 90o, and the other with a slope of 25o. The height of the highwalls above water was 10 feet, while the depth of the ponds was 30 feet.

Pond #324 was dammed by beaver, and is the only pond to show any obvious signs of use.

STREAMS

Two streams which flow through this section were tested in early August, 1984. The pH was 5.5 for both streams, while the flows were 0.20 and 0.68 ft^3/sec.

SOILS

Three soil samples were gathered for analysis from the Slope Road/North Minto Mine. Analysis showed pH's ranging from 4.0 and 4.7, very low levels of phosphorus, low levels of potassium, low to very low levels of calcium and medium levels of magnesium. The dominant soil texture is clay with some sand. The dominant parent material is shale.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 0-5% to 40-45% with the average density being 23%. Twenty nine species were identified from this area.

Non-Vascular Plants (Lichens)

One species of lichen, *Cladonia cristatella*, was identified from the transects in this section.

SECTION II E: SLOPE ROAD MINE

GENERAL DESCRIPTION

The Slope Road Mine is 3 acres in size and is Crown land. This mine is less than one half mile west of the Minto village limits. The nearest permanent dwellings are within one half mile.

Section II E was not strip-mined; rather, it was a shaft mine. There are no spoil piles and the area is barren (i.e. supports no vegetation). This area was previously covered with underground surface dumpings, but at some time it was used to stockpile coal. Information concerning when this section was mined is unavailable.

Section II E can be reached via the Slope Road and the New England Road, both of which are in good condition.

FORESTRY

Section II E has a total land area of 3 acres, none of which is contoured or has tree life. All 3 acres of the section are designated as "non-contoured, not planted and openly stocked".

The average slope of the spoil piles in this section is 5°.

SOILS

One soil sample was gathered from this section. Analysis showed a pH of 2.8 and very low levels of phosphorus, potassium and calcium and low levels of magnesium. The dominant soil texture for this area is sandy. The parent material is predominantly sandstone.

VEGETATION

Vascular Plants

One transect was completed in this area; no vegetation was present.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II F: SLOPE ROAD MINE

GENERAL DESCRIPTION

Section II F has an area of seven acres and is Crown land. The section is less than one half mile west of the Minto village limits and was also a shaft mine. It is very near Section II E, and, like Section II E, supports no vegetation growth. Information concerning years of mining is unavailable.

The nearest permanent dwellings are within one half mile of the site. This section can be reached via the Slope Road and the New England Road, both of which are in good condition.

FORESTRY

Section II F has a total land area of seven acres, none of which is contoured or has tree life. All seven acres of the section are designated as "non-contoured, not planted and openly stocked".

The average slope of the spoil piles in this section is 15°.

SOILS

One soil sample was taken from this section. Analysis showed a pH of 4.0, very low levels of phosphorous and calcium, and low levels of potassium and magnesium. The dominant soil texture for the area is sandy, while the parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in Section II F. The vegetation density was 0-5%; one species of vascular plant was identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II G: SLOPE ROAD MINE

GENERAL DESCRIPTION

This section of the Slope Road Mine is 10 acres in size and was also an underground shaft mine. The area is Crown land, less than one half mile west of the Minto village limits. The nearest permanent dwellings are within one half mile.

This section can be reached via the Slope Road and the New England Road, both of which are in good condition. No information is available concerning the years of mining.

FORESTRY

Section II G has a total land area of 10 acres, none of which is contoured or has tree life. All 10 acres of the section are designated as "non-contoured, not planted and openly stocked".

The average slope of the spoil piles in this section is 10°.

SOILS

One soil sample was taken from this section. Analysis showed a pH of 4.2 with very low levels of phosphorus, low levels of potassium and calcium and medium levels of magnesium.

The dominant soil texture is sandy, while the parent material is predominantly sandstone.

VEGETATION

Vascular Plants

One transect was completed in this area; no vascular plants were present.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II H: HARDWOOD RIDGE MINE

GENERAL DESCRIPTION

The Hardwood Ridge Mine is 38 acres in size and is totally inaccessible by road. This area was mined between 1970 and 1976 by N. B. Coal Ltd. Since the area was not observed in the field, all data was taken from aerial photographs. No data is available for the streams, vegetation or soils in the area. There is one pond on the site, however, it is not a priority pond.

This section is fairly remote; there are no homes near it. It is one and a half miles north of the Minto village limits. The land is owned by the Bishops Lumber Co.

FORESTRY

Section II H has a total land area of 38 acres, all of which is contoured. The area does not support tree life. It appears that the contouring is recent, which may explain the absence of tree life.

SECTION II I: BAIRDS HILL MINE

GENERAL DESCRIPTION

The Bairds Hill Mine is approximately 74 acres in size and is Crown land. Strip mining by the N. B. Coal Ltd. occurred here in 1974. The area is located just east of North Minto and is within Minto's village limits. The nearest houses are about a quarter of a mile away in North Minto, but the area is somewhat isolated by the Newcastle Creek.

Two dirt roads provide access to the mine site. One is a continuation of the road from the industrial park and provides good access when not wet. The second parallels Newcastle Creek and originates from the North Minto Road.

FORESTRY

Section II I has a total area of 74 acres, all of which is contoured and forested. Sixty five acres of this site are planted with Jack Pine and 9 acres are regenerating naturally.

The average slope of the spoil piles in this section is 5°.

PONDS

One pond in Section II I was designated as a priority pond. Its pH was 6.0; its maximum depth was 15 feet. Accessibility to the pond was fair with a shore slope of about 20°. This is not a highwall pond and apparently is not used at present.

SOILS

One soil sample was taken from this section. Analysis showed a pH of 5.0, very low levels of phosphorus, low levels of potassium, medium levels of magnesium, and high levels of calcium.

The dominant soil texture is sandy, while the parent material is predominantly sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 5-10% with sixteen species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II J: BAIRDS HILL MINE

GENERAL DESCRIPTION

Section II J of the Bairds Hill Mine is approximately 8 acres in size. It is composed of surface dumpings from an underground shaft mine that existed before the 1950's. This area is entirely Crown land.

The area is located about a half mile due east of North Minto and is inside Minto's village limits. The nearest houses are in North Minto. This section is slightly isolated from homes because of Newcastle Creek which flows between the town and the mined area.

Two dirt roads lead into the area. One is a continuation of the Minto Industrial Park Road while the second originates from the North Minto Road and parallels Newcastle Creek. Both are good roads except when wet.

FORESTRY

Section II J has a total land area of 8 acres, all of which is contoured. This section does not support tree life.

The average slope of the spoil piles in this section is 10°.

SOILS

One sample was taken from Section II J. Analysis revealed a pH of 3.6, very low levels of phosphorous and calcium, low levels of potassium and medium levels of magnesium. The dominant soil texture is clay while the dominant parent material is shale.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with ten species being identified.

Non-Vascular Plants (Lichens)

One species of lichen, Cladonia cristatella, was identified from the transect in this section.

SECTION II K: NEW ENGLAND MINE

GENERAL DESCRIPTION

Section II K of the New England Mine is approximately 358 acres in size and was strip-mined by N. B. Coal Limited between 1965 and 1973. The area is located just west of Minto and is about one half mile outside the village limits. The nearest houses are those of the New England Settlement on the southeastern edge of the mined area. The northern part of the section is older than the southern portion with pond #148 acting as a barrier between the areas. Two dirt roads lead into the section. One is a continuation of the New England Settlement Road and leads into the southern portion of the section. The second exits the northern portion of the area and leads to Section I A. Both roads are good except under wet conditions and when pond #319 floods.

This section is Crown land with the exception of the southeastern corner. Here, two individuals and N. B. Coal Limited own approximately 70 acres. Present uses of the area include a garbage dump and a rifle range.

FORESTRY

Section II K has a total land area of 318 acres, of which 27 acres are contoured. Three hundred and four acres are forested; 14 acres have no tree life. Of the forested land, 233 acres are planted and 71 acres are regenerating naturally. Approximately 24 acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 27° and an average height of 25 feet.

PONDS

In Section II K, there were seven ponds designated as priority ponds. These were tested along with another which was not a priority pond. The eight ponds surveyed had pH's ranging from 3.5 to 6.0, and depths from 3 to 50+ feet. Accessibility to five ponds (#'s 332, 333, 348, 356 and 362) is categorized as good. The slope of the banks adjacent to the ponds averages 37°. The ponds were used by ducks, and as garbage dumps. Only one highwall pond (#354) was tested in this section. It had a slope of 70° on one side and 30° on the other. The height of the highwall above water was estimated to be 15 feet, while the pond depth was greater than 50 feet.

SOILS

Three soil samples were gathered from Section II K. Analysis revealed a pH range of 3.9 to 4.7, very low levels of phosphorus and calcium and low to very low levels of potassium and magnesium. The dominant soil texture is sandy while the dominant parent material is sandstone.

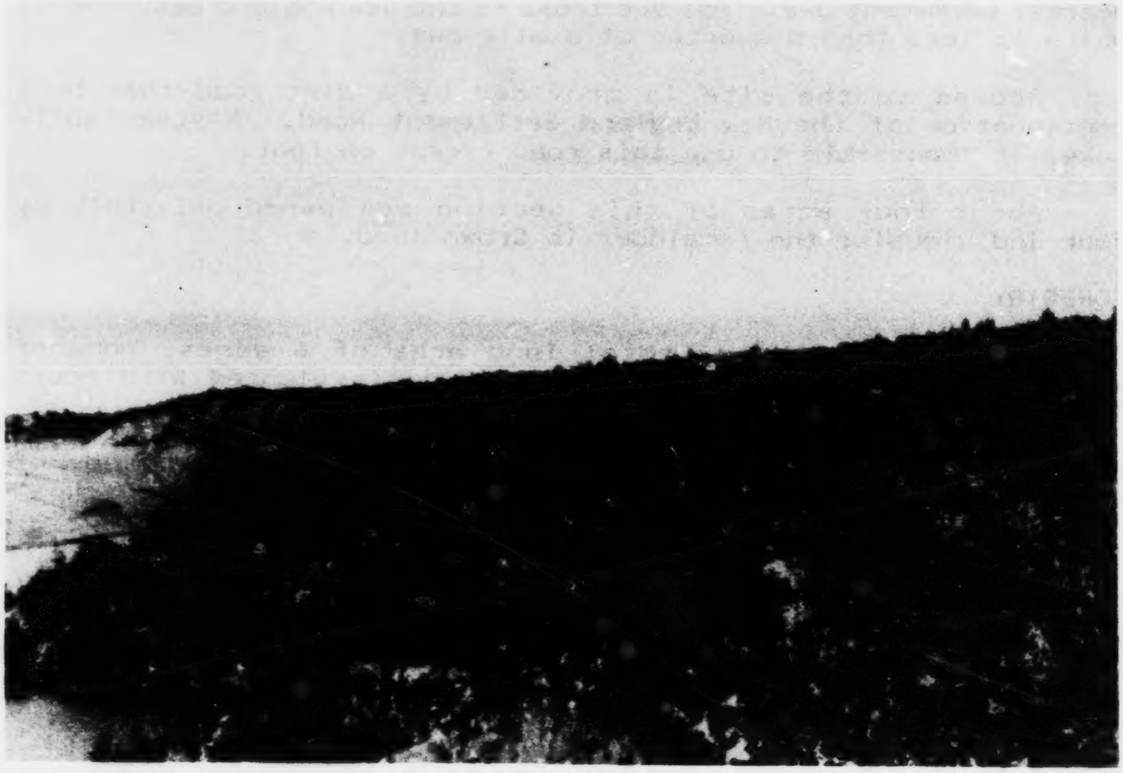


Figure 9 - Rocky sandstone areas revegetate very slowly.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 30 to 35% with twenty species being identified.

Non-Vascular Plants (Lichens)

Three lichen species were identified from the transect in this section: Cladonia verticellata and Cladonia cristatella were the most abundant species.

SECTION II L: NEW ENGLAND MINE

GENERAL DESCRIPTION

Section II L of the New England Mine is approximately nine acres in size. N. B. Coal Limited mined this area in 1973. This section, located just west of the New England Settlement, is about one half mile outside the Minto village limits. The nearest permanent dwellings are those in the New England Settlement, which is less than a quarter of a mile away.

Access to the site is provided by a dirt road that is a continuation of the New England Settlement Road. A steep gully makes it impossible to use this road except on foot.

About four acres of this section are owned privately by four individuals; the remainder is Crown land.

FORESTRY

Section II L has a total land area of 6 acres, none of which is contoured. All of this section is planted with Scoth Pine.

The spoil piles in this section have an average slope of 30° and an average height of 25 feet.

PONDS

One pond in Section II L (#364) was designated as a priority pond. It had a pH of 6.0, a depth of 14 feet and adjacent slopes of 25°. This pond has been used as a garbage dump. Accessibility to this pond, was good by road, but only fair to the shoreline.

STREAMS

Two streams were surveyed in this section. One of these streams flowed into pond #364 while the other, Gilchrist Brook, flowed out. The pH's ranged from 5.5 to 6.0, while the stream flows were 1.14 and 4.05 ft^3/sec. Both samples were taken in August, 1984.

SOILS

One soil sample was gathered in this area. Analysis revealed a soil pH of 4.2, very low levels of phosphorus, potassium and calcium, and medium levels of magnesium.

The dominant soil texture is sandy clay; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 30 to 35% with seventeen species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II M : NEW AVON MINE

GENERAL DESCRIPTION

Section II M of the New Avon Mine is approximately 14 acres in size. Information concerning the years this site was mined is not available. This section, located just west of New Avon, is about one mile outside of the Minto village limits. The nearest permanent dwellings are in New Avon, about one half mile away.

Access to the site is provided by a single lane dirt road that originates in New Avon. Deep ruts and dense forest growth make this road impassable except by four-wheel drive vehicle.

Section II M is owned by the Crown.

FORESTRY

Section II M has a total land area of 14 acres, none of which is contoured. This area is naturally regenerating forest as no planting has taken place. Twelve acres are designated as "non-contoured, not planted and openly stocked."

The spoil piles in this section have an average slope of 25°, and an average height of 15 feet.

PONDS

Three ponds in Section II M are designated as priority ponds. Only one of these ponds (#366) was tested due to the fact that the other ponds were inaccessible. The pond surveyed had a pH of 4.0, a depth of 13 feet and 30° shore slopes. Accessibility by road is good and the pond shore could be reached on foot. It was used as a swimming hole.

SOILS

One soil sample was gathered from this area. Analysis showed a soil pH of 5.1, low levels of phosphorus, potassium, and calcium, and medium levels of magnesium. The dominant soil texture is sandy clay while the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 10-15% with ten species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II N : NEW AVON MINE

GENERAL DESCRIPTION

Section II N of the New Avon Mine is approximately 93 acres in size and was mined in the 1960's. It is located just south of New Avon about three quarters of a mile outside the Minto village limits. The nearest houses are in New Avon which is less than one half mile away.

Two roads, both originating in New Avon, provide access to the area. One of these enters the north central part of Section II N and is only passable with a four-wheel drive vehicle. The other, in better condition than the first, enters in the northeastern part of the section.

Four acres are owned by three individuals; the remainder is Crown land.

FORESTRY

Section II N has a total land area of 71 acres, none of which is contoured. All of the section is forested; 37 acres are planted with pine and 34 acres are regenerating naturally. Thirty four acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 20 feet.

PONDS

There were six ponds in Section II N designated as priority ponds. Only two of the six were tested because the remaining four ponds were inaccessible. The two ponds tested have pH's ranging from 5.5 to 6.0, and depths varying from 12 to 33 feet. One pond, #379, was considered to have fair to good accessibility. Access to the other pond, #369, was poor. The slopes in the area of the ponds tested averaged 29°.

SOILS

One sample was gathered in Section II N. Analysis revealed a soil pH of 4.3, very low levels of phosphorus, potassium and calcium, and low levels of magnesium. The dominant soil texture is sandy clay while the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with twelve species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II O : AVON MINE

GENERAL DESCRIPTION

The Avon Mine is 1868 acres in size. This area was mined from 1949 to 1969 by the Avon Coal Company. After 1969, N. B. Coal Limited mined this area. This section is located just south of Minto. Its northwestern portion lies within the village limits, while the southeastern portion lies about two miles outside the village limits.

Permanent dwellings are found within one quarter mile of the section. They include those near the N. B. E. P. C. generatng station at Newcastle Creek, those at Flowers Cove, those along Evans Road, those at Avon, and those in Rothwell.

The first mining to occur in this region was shaft mining, located primarily in the northwestern corner of the section. Two of the longer operating shaft mines in this area belonged to Tweedie and Yeamans (from Minto Coalfield, 1944). In terms of strip mining, the northwestern region of the strip mined area is the oldest. It contrasts sharply with the newer mined areas that make up the remainder of Section II O.

Several roads provide access to this area. Route 10 cuts through the western side, while Route 690 cuts through the eastern side. In addition, the Evans Road bisects Section II O as it runs between these two roads. Several smaller branch roads originate from the Evans Road.

Thirteen individuals, Avon Enterprises, Wasson Bar Ltd. and N. B. Coal Ltd. own a total of 527 acres in Section II O. Of special note in this area is the crushed aggregate plant and the provincial fish hatchery.

FORESTRY

Section II O has a total land area of 1809 acres, of which 180 acres are contoured. Approximately 1689 acres are forested and 120 acres have no tree life. Of the forested land, 1361 acres are planted with Jack Pine, Scotch Pine, Red Pine, Black Locust and Norway Spruce and 328 acres are regenerating naturally. Two hundred and twenty two (222) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 25o and an average height of 35 feet.

PONDS

There were 17 ponds in Section II O designated as priority ponds but only six were accessible. An additional four ponds were tested to make a total of ten ponds surveyed in this area. These ponds had a pH range of 4.0 to 7.5, and depths ranging from 9 to 42 feet. Three ponds were classified as having poor accessibility (#396, #431 and #446) while seven had good access (#'s 408, 419, 420, 426, 444, 445, and 449). The average slope of the banks adjacent to these ponds was 45°.

Four highwall ponds were tested in Section II O. These highwall ponds have 90° slopes on one side and 30° to 45° slopes on the other. The height of the highwalls above water varied from 30 to 40 feet. The depth of the ponds was between 6 and 36 feet.

The ponds in this section have various uses including angling, dumping and wildlife habitat for ducks and beaver. Two of these ponds (#420 and #426) are used as a water supply for the provincial fish hatchery.

STREAMS

One stream was surveyed in this section. The pH was 7.0; the stream flow was 6.12 ft^3/sec. The sample was taken in August, 1984.

SOILS

Eleven soil samples were gathered from Section II O. Analysis revealed a pH range of 4.0 to 5.6, very low to low levels of phosphorus, low to medium levels of potassium, very low to high levels of calcium, and low to very high levels of magnesium.

The dominant soil texture is primarily sandy clay, while the dominant parent material is sandstone. There was only one exception to this, and that was a sample with clay as the dominant soil texture and shale as the dominant parent material.

VEGETATION

Vascular Plants

Three transects were completed in this section. The vegetation density ranged from 0-5% to 5-10% with the average density being 4%. Thirty species were identified from this area.

Non-Vascular Plants (Lichens)

Four lichen species were identified from the transects in this section with Peltigera canina and Cladonia cristatella being the most abundant.

SECTION II P: NEWCASTLE BRIDGE MINE

GENERAL DESCRIPTION

Section II P of the Newcastle Bridge Mine is approximately 52 acres in size and was mined in the 1970's by Harold Knox. Section II P is entirely within the Minto village limits, and is just west of Newcastle Bridge. The nearest permanent dwellings are located on Bridge Street and Diamond Drive in Minto. Access to the site is possible from Bridge Street and Diamond Drive, but is mainly through private driveways or by an abandoned railroad line.

About 15 acres of this mine are privately owned by two individuals; the remainder is Crown land.

FORESTRY

Section II P has a total land area of 52 acres, of which 30 acres are contoured. All of the section is naturally regenerating forest as no planting has taken place. One acre is designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 13°; their average height is 20 feet.

SOILS

One soil sample was gathered from Section II P. Analysis revealed a pH of 4.3 with low levels of phosphorus and potassium, medium levels of calcium, and high levels of magnesium. The dominant soil texture is sandy clay, while the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with fourteen species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II Q : NEWCASTLE BRIDGE MINE

GENERAL DESCRIPTION

Section II Q of the Newcastle Bridge Mine is approximately 44 acres in size. Information concerning the years this area was mined is not available. This site, located just east of Newcastle Bridge, is entirely within the Minto village limits. The nearest houses are those of Newcastle Bridge, less than a quarter mile away. Access to the site is provided by Cedar Street which skirts the northern border. An abandoned CPR line also provides access, although this is limited to four-wheel drive vehicles.

This section is privately owned by one or two individuals.

FORESTRY

Section II Q has a total land area of 44 acres, of which 14 acres are contoured. The entire section is forested; 30 acres are planted with softwoods and 14 acres are regenerating naturally.

The spoil piles in this section have an average slope of 19° and an average height of 35 feet.

STREAMS

One stream sample was taken in this section. The stream, a branch of Newcastle Creek, had a pH of 5.5 and a flow of 0.20 ft^3/sec.

SOILS

One soil sample was gathered from Section II Q. Analysis revealed a pH of 5.8, very low levels of phosphorus, low levels of potassium, and high levels of calcium and magnesium. The dominant soil texture is sandy clay while the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 15-20% with twenty species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION II R : NEWCASTLE CENTRE MINE

GENERAL DESCRIPTION

Section II R of the Newcastle Centre Mine is 41 acres in size and was mined between 1960 and 1965. There are no roads leading to the section except Highway 690, between Minto and the Grand Lake Generating Station, which runs just east of the area. This area is one half mile east of the Minto village limits. There are permanent dwellings within one quarter mile of the site.

Section II R is privately owned by two individuals.

FORESTRY

Section II R has a total land area of 37 acres, none of which is contoured. This section is naturally regenerating forest as no planting has taken place. All 37 acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 20 feet.

PONDS

There are three ponds in Section II R which were designated as priority ponds, however, they were inaccessible.

SOILS

One sample was gathered in Section II R. Analysis revealed a pH of 4.3, low levels of potassium and magnesium, and very low levels of phosphorus and calcium. The dominant soil texture is sandy clay and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with fourteen species being identified.

Non-Vascular Plants (Lichens)

Four lichen species were identified from the transects in this section. Cladonia cristatella and Cladina rangiferina were the most abundant lichen species.

SECTION II S : NEWCASTLE CENTRE MINE

GENERAL DESCRIPTION

Section II S of the Newcastle Centre Mine is 14 acres in size and was mined between 1960 and 1965. This area is east of Highway 690 and there are two good roads leading to the mine site. This section is one half mile east of the Minto village limits. There are permanent dwellings within one quarter mile of the site. Five acres of the mined land are owned by one individual; the remainder is Crown land. This area is park-like in appearance.

FORESTRY

Section II S has a total land area of 14 acres, none of which is contoured. All of the area is naturally regenerating forest as no planting has taken place.

The spoil piles in this section have an average slope of 30° and an average height of 20 feet.

SOILS

One soil sample was collected from Section II S. Analysis revealed a pH of 3.6, very low levels of phosphorus, potassium, and calcium, and low levels of magnesium. The dominant soil texture is sandy clay; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 5-10% with eighteen species identified.

Non-Vascular Plants (Lichens)

Three species of lichens, *Cladonia cristatella*, *Cladonia verticellata*, and *Stereocaulon paschale* were found on the transect in this section.

SECTION II T: NEWCASTLE CENTRE MINE

GENERAL DESCRIPTION

Section II T of the Newcastle Centre Mine is 445 acres is size and was mined between 1970 and 1971. The western portion of this section is inside the Minto village limits, the eastern portion is outside the village. There are a few homes within one half mile in nearby Newcastle Bridge.

Access to this section is provided by five roads, all in good condition. One road reaches the site from the west (Cedar Road), one from the north, and three from the east. The roads from the east include one that follows the power lines, one that crosses Newcastle Creek and another called the Lafitte Road.

Six acres of this section are privately owned by one individual. The remainder of the mine is Crown land.

FORESTRY

Section II T has a total land area of 425 acres, of which 5 acres are contoured. All of this section is forested; 279 acres are planted with Red Pine and Jack Pine, and 146 acres are regenerating naturally. Ninety two (92) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 28° and an average height of 35 feet.

PONDS

Eleven ponds in Section II T were designated as priority ponds, but only nine were accessible. The nine ponds tested had pH's ranging from 5.5 to 7.5, and depths varying from 14 to 35 feet. Three of the nine ponds were classified as having good accessibility (#466, #478, #503). The remaining six ponds (#'s 467, 468, 469, 477, 489, and 504) had poor accessibility. The average slope of the pond banks is 30°. These nine ponds were used by beaver, for angling, and as garbage dumps.

SOILS

Two samples were gathered in Section II T. Analysis revealed a pH range of 4.7 to 5.7, low levels of phosphorus and potassium, low to medium levels of calcium, and medium to high levels of magnesium. The dominant soil texture is sandy clay; the dominant parent material is sandstone.

VEGETATION

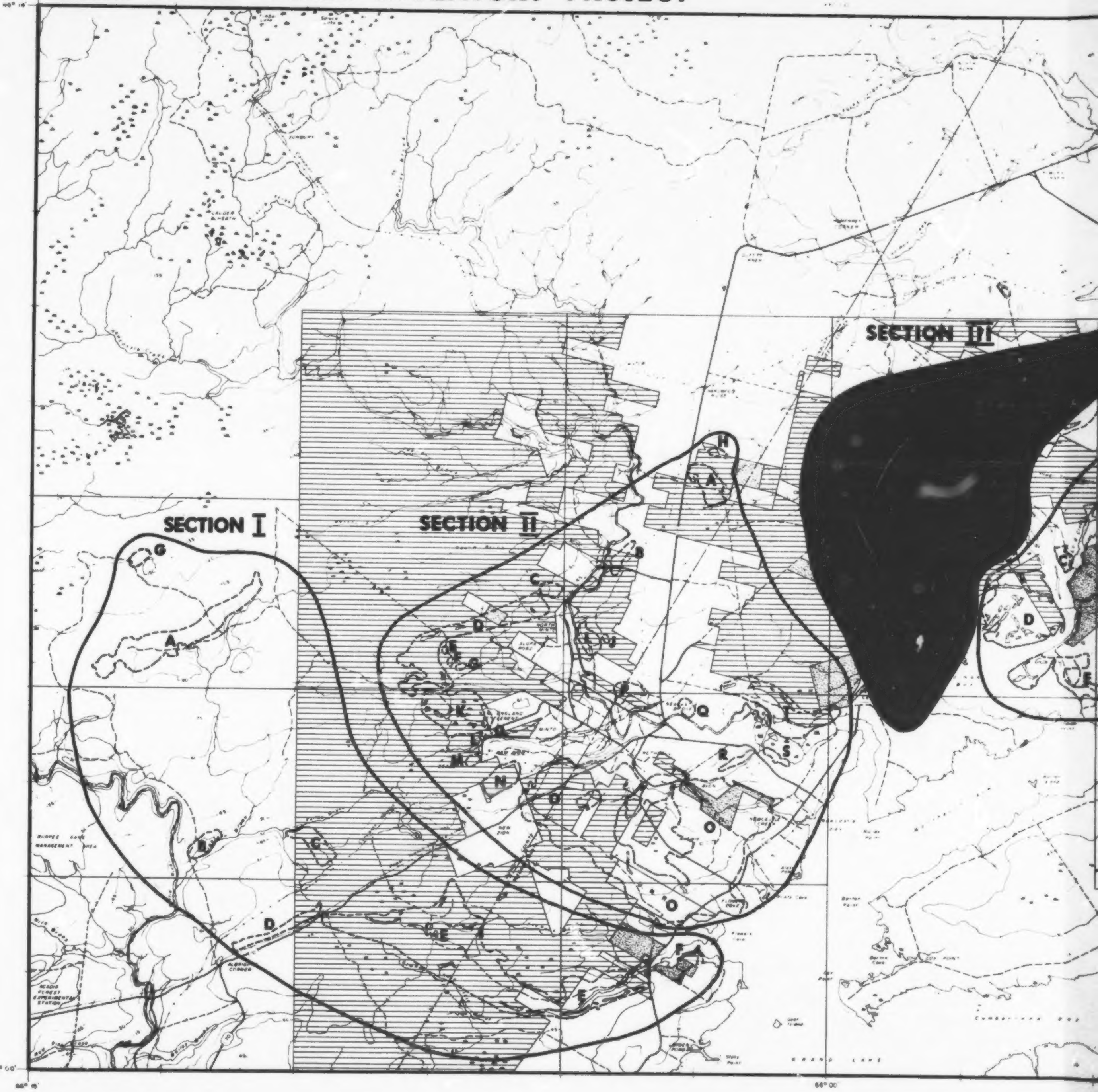
Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 20-25% to 40-45% with the average density being 53%. Twenty four species were identified.

Non-Vascular Plants (Lichens)

Four species of lichens were identified from the transects in this section. *Cladonia cristatella* was the most abundant lichen species.

MINTO - CHIPMAN MINED LANDS INVENTORY PROJECT


66° 15'
46° 14'
46° 00'
66° 15'
66° 00'
SECTION I
SECTION II
SECTION III
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
Sunbury
Lauder Sheath
Minto
Burpee Game Management Area
Acadia Forest Experimental Station
Flowers Cove
Gerton Point
Barton Cove
Cox Point
Goat Island
Grand Lake
Cumberland Bay
Stony Point

Prepared by:

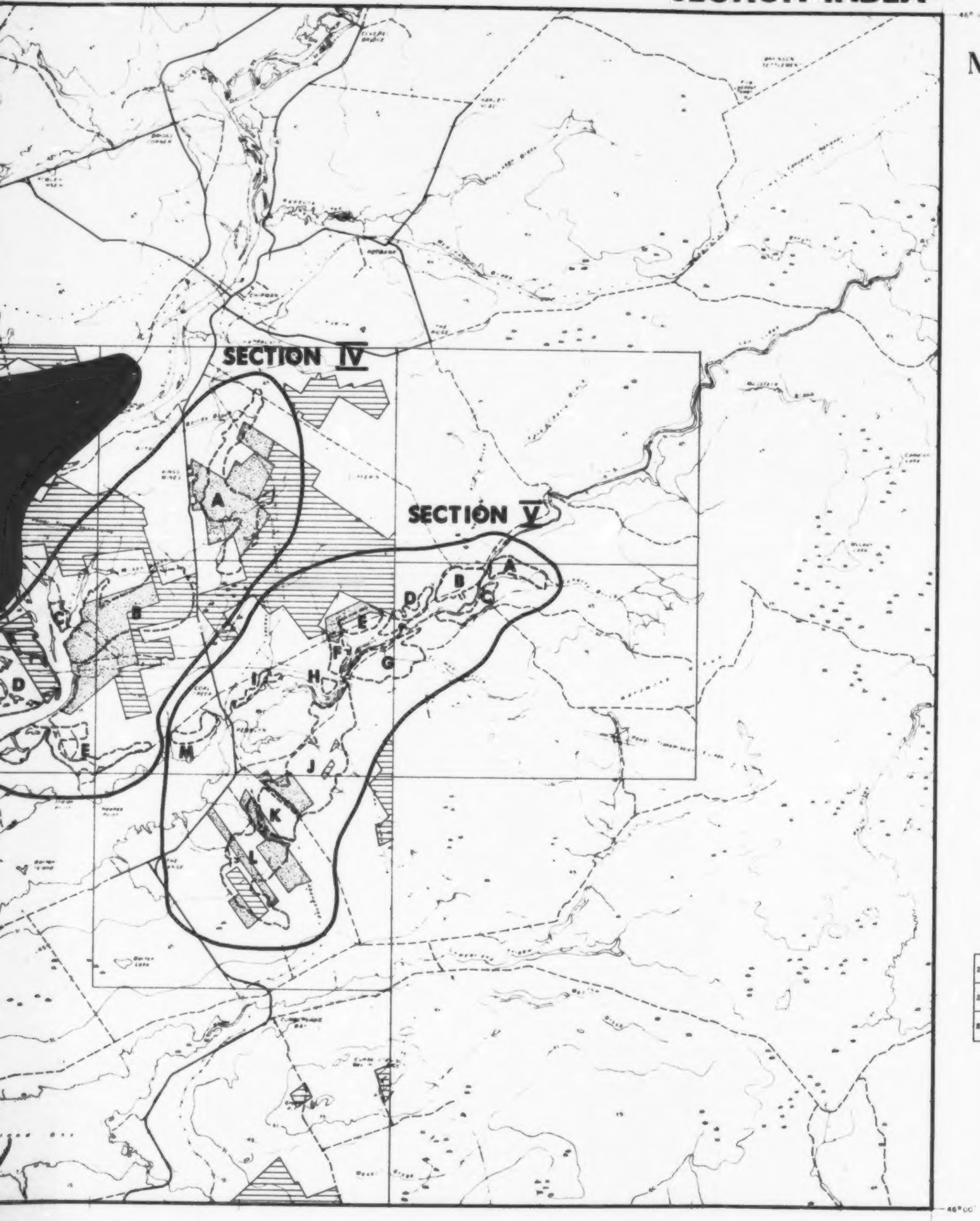
THREE-D GEOCONSULTANTS LIMITED

SCALE 1:50,000

Metres 1000 0 1000 2000 3000 4000 5000

CONTOUR INTERVAL 15 METRES
(ERROR OF ~16%)

SECTION INDEX



MINING LICENCE
No: 1307

-LEGEND-

- Main roads
- Secondary roads and trails
- Railway
- Power transmission line
- Lake or pond
- Rivers and streams
- Wetland
- Topographic contours (note For the sake of simplified representation, the values converted to the metric system are 1.6 % below their actual values)
- Section boundary
- H Mined area index
- ☐ Private property
- ▤ Crown land
- ▨ N.B. Coal property
- Area disturbed by Strip Mining

1:10,000 Topography (Ortho) Index

	21 J/01 W3	21 J/01 W4	21 I/04 U3	21 I/04 U4	21 I/04 V3
21 J/01 V2	21 J/01 W1	21 J/01 W2	21 I/04 U1	21 I/04 U2	21 I/04 V1
21 J/01 S4	21 J/01 T3	21 J/01 T4		21 I/04 R4	
21 J/01 S2	21 J/01 T1	21 J/01 T2			

Prepared for

NB
COAL LTD.

SECTION III A: MIDLAND MINE

GENERAL DESCRIPTION

This section of the Midland Mine is 196 acres in size and was mined in the 1950's by Aubrey Wasson. The mine is situated about one mile east of the Chipman village limits. The Post Road passes along this area and the nearest homes are on this road. A dirt road in good condition runs through part of the mine. The land in this area is owned privately by three individuals and two companies.

FORESTRY

Section III A has a total land area of 164 acres, none of which is contoured. All of the area is naturally regenerating forest as no planting has taken place. Seventy seven (77) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 30 feet.

PONDS

There were six ponds designated as priority ponds in Section III A. Five ponds were tested. Their pH's ranged from 2.5 to 7.0, and their depths ranged from 14 feet and 40 feet. The average slope of the pond banks was 39°. Only one pond (#511) could be categorized as having good to fair access both by road and on foot. The remaining ponds (#'s 507, 508, 509 and 513) had poor accessibility both by road or on foot. One of these ponds is currently being utilized by beaver.

There is one highwall pond in this section (#511). The slopes of the pond banks were 75° on one side and 30° on the other. The height of the highwall above water was 25 feet; the pond's depth was 40 feet.

STREAMS

There were two streams surveyed in this section. One was sampled in late August, the other in early September. Both had a pH of 6.0; their flows were 0.34 and 0.85 ft^3/sec.

SOILS

One soil sample was collected from Section III A. Analysis showed a pH of 4.7, low levels of phosphorus and potassium, medium levels of calcium and high levels of magnesium. The dominant soil texture of this area is silt, whereas the parent material is predominantly shale.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 10-15% to 20-25% with the average being 18%. Thirty-four species were identified from this area.

Non-Vascular Plants (Lichens)

Only crustose lichens were found in this section.

SECTION III B: MIDLAND MINE

GENERAL DESCRIPTION

This section of the Midland mine is 34 acres in size and was mined by Aubrey Wasson in the 1950's. The mine is located two miles east of the Chipman village limits and is near the Post Road. There is a road, in fair condition, to the edge of the mine, however, the interior of the mine can be reached only on foot. The nearest permanent dwellings are less than two miles away along the Post Road. Mills Coal Recovery Plant (Roy Mill's operation dredging coal fines from the bed of Iron Bound Cove Stream) is situated just to the west of this mine. This section is privately owned by one individual.

FORESTRY

Section III B has a total land area of 31 acres, none of which is contoured. All of this area is forested land that has been planted with softwoods.

The spoil piles in this section have an average slope of 30° and an average height of 30 feet.

PONDS

There was one priority pond in Section III B, but it was inaccessible.

STREAMS

In October, 1984, Iron Bove Cove Stream was sampled at a point just to the north of Section III B. It had a pH of 3.0 and a flow of 20.14 ft^3/sec.

SOILS

One sample was collected from this section. Analysis revealed a soil pH of 4.9, low levels of phosphorus and potassium, medium levels of calcium and high levels of magnesium. Soil texture at this mine is clay and sand, while the parent material is shale and sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with fourteen species being identified.

Non-vascular Plants (Lichens)

No lichens were found on the transect in this section.

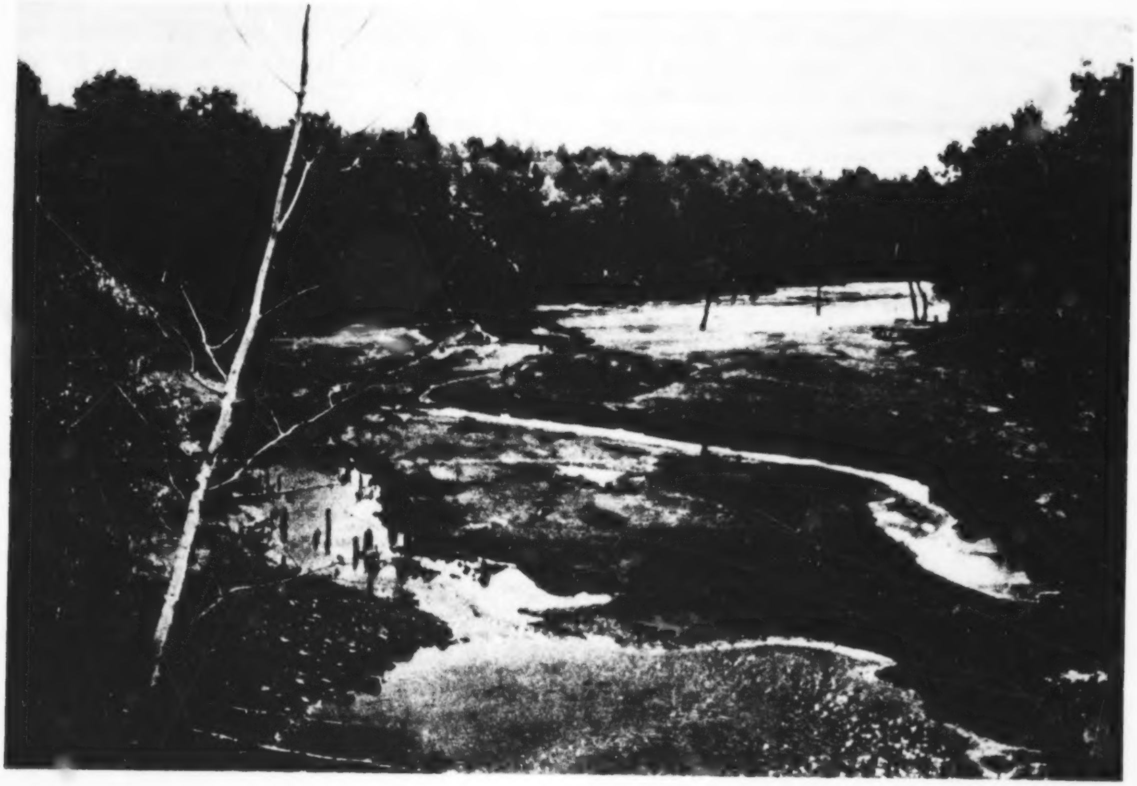


Figure 10 - Iron Bound Cove Stream - Coal fines from an old coal wash have been deposited along the length of this stream.

SECTION III C: MIDLAND MINE

GENERAL DESCRIPTION

This section of the Midland Mine is 45 acres in size and was mined in the 1950's by Aubrey Wasson. The area is three miles east of the Chipman village limits and borders on the Post Road. The nearest permanent dwellings are less than a mile away on the Post Road. The Mills Coal Recovery Plant is just on the eastern side of the section. Roads on the mine site vary from fair to very poor and can be used, in most cases, only by four-wheel drive vehicle.

The land in Section III C is privately owned by one individual.

FORESTRY

Section III C has a total land area of 43 acres, none of which is contoured. All of this area is naturally regenerating forest as no planting has taken place. Forty three (43) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 35 feet.

PONDS

There was one priority pond in Section III C, but it was inaccessible.

SOILS

One soil sample was collected in Section III C. Analysis revealed a pH of 5.3, very low levels of phosphorus, medium levels of potassium, high levels of calcium and very high levels of magnesium. The dominant soil texture is clay and sand, while the dominant parent material is shale and sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with eighteen species being identified.

Non-vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION III D: MIDLAND MINE

GENERAL DESCRIPTION

Section III D of the Midland Mine is 194 acres in size and was mined in the 1950's by Aubrey Wasson. This mine is located three miles east of the Chipman village limits. The nearest permanent dwellings are less than a mile away along the Midland Road. The only access to the site is via a dirt road, in poor condition, that passes through Section III C. The land in this area is privately owned by two individuals.

FORESTRY

Section III D has a total land area of 169 acres, none of which is contoured. All of the area is forested land; 150 acres are planted with softwoods, and 19 acres are regenerating naturally. Thirteen (13) acres designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 29° and an average height of 35 feet.

PONDS

There were six priority ponds in Section III D but only two (#528 and #529) were accessible. The pH of these two ponds was 6.0, and their depths varied from 22 to 23 feet. The average slope of spoils adjacent to these ponds was 52°. Neither of the ponds surveyed were easily accessible by road or on foot. One pond was a highwall pond with 85° slopes on one side and 25° slopes on the other. The height of the highwall above water was 35 feet, while the pond depth was 23 feet.

SOILS

One soil sample was collected from this section. Analysis showed a pH of 5.0, very low levels of phosphorus, low levels of potassium and calcium, and very high levels of magnesium. The soil texture is predominantly silt, while the dominant parent material is shale.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 0-5% to 20-25% with the average being 13%. Twenty nine species were identified.

Non-vascular Plants (Lichens)

Two lichen species were identified from the transect in this section. Cladonia cristatella was the most abundant.

SECTION III E: MIDLAND MINE

GENERAL DESCRIPTION

Section III E of the Midland Mine is 75 acres in size and was mined in the 1950's by Aubrey Wasson. This mine is two miles northeast of the Minto village limits and borders the Midland Road. The nearest permanent dwellings are less than one mile away along the Midland Road. There are no roads through the mine site, however, access is possible on foot. The land in this area is privately owned by one individual.

FORESTRY

Section III E has a total land area of 55 acres, none of which is contoured. All of the area is naturally regenerating forest as no planting has taken place. Fifty five (55) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 30 feet.

PONDS

There were four priority ponds in this section, but only one (#537) was tested due to the general inaccessibility of the area. Access to this pond was fair to good. Its pH was 3.5, while its depth was 25 feet. Some dumping had occurred in this pond.

STREAMS

One stream was sampled in Section III E. It had a pH of 4.0 and a flow of 0.40 ft^3/sec in September, 1984.

SOILS

One soil sample was collected in Section III E. Analysis showed a pH of 3.5, very low levels of phosphorus, potassium, magnesium and calcium. The dominant soil texture is sand and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with six species being identified.

Non-vascular Plants (Lichens)

No lichens were found on this transect.

SECTION III F: MIDLAND MINE

GENERAL DESCRIPTION

Section III F of the Midland Mine is 35 acres in size and was mined in the 1950's by Aubrey Wasson. The paved Midland Road passes close to the section but does not provide access to the site. The only access is an old railway bed overgrown with alders and other trees. This section, situated three miles northeast of the Minto village limits, is owned by one individual. The nearest homes are less than a mile away along the Midland Road.

FORESTRY

Section III F has a total land area of 33 acres, none of which is contoured. All of the area is naturally regenerating forest as no planting has taken place.

The spoil piles in this section have an average slope of 30° and an average height of approximately 25 feet.

PONDS

There was one priority pond in this section but it was inaccessible.

STREAMS

Two streams, Perley Brook and Vance Brook, were sampled in Section III F. The pH of these streams varied from 5.0 to 6.0 while their flows were 1.86 ft^3/sec and 2.61 ft^3/sec. These streams were surveyed in October, 1984.

SOILS

One soil sample was collected from Section III F. Analysis revealed a pH of 3.9, very low levels of phosphorus, magnesium and calcium, and low levels of potassium. The soil texture of this area is predominantly sand; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with eighteen species being identified.

Non-vascular Plants (Lichens)

Five lichen species were identified from the transect in this section. Cladonia cristatella was the most abundant.

SECTION III G: MIDLAND MINE

GENERAL DESCRIPTION

Section III G of the Midland Mine is 33 acres in size and was mined in the 1950's by Aubrey Wasson. This mine is bordered on the south side by the Post Road and is situated three miles northeast of the Minto village limits. The nearest homes are located along the Midland Road. The mine is visible from the Post Road.

The land in this area is privately owned by one individual.

FORESTRY

Section III G has a total land area of 29 acres, none of which is contoured. All of this area is naturally regenerating forest as no planting has taken place.

The spoil piles in this section have an average slope of 30° and an average height of 20 feet.

PONDS

There are two priority ponds, #543 and #545, in this section. The pH's of these ponds were 4.5 and 6.0 while their depths were 16 feet and 25 feet. Both of these ponds were accessible by road but could not be reached easily on foot. Pond #545, is a highwall pond with 90° slopes on one side and 20° on the other. This pond is 25 feet deep, and the highwall is 20 feet above the water level. The other pond, #543, is used for swimming, and has a falls where Perley Brook enters it.

STREAMS

One stream, Perley Brook, was sampled in Section III G. It had a pH of 4.0 and a flow of 0.50 ft^3/sec in August, 1984.

SOILS

One soil sample was collected from this section. Analysis showed a pH of 4.2, very low levels of phosphorus, medium levels of potassium and calcium and very high levels of magnesium. The soil texture is clay and sand; the parent material is a combination of shale and sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 0-5% to 20-25% with the average being 13%.

Thirty-one species were identified from this area.

Non-vascular Plants (Lichens)

Eleven lichen species were identified from these transects. *Cladonia cristatella* was the most abundant.

SECTION III H: MIDLAND MINE

GENERAL DESCRIPTION

Section III H of the Midland Mine is 30 acres in size and was mined in the 1950's by Aubrey Wasson. This mine is bordered on the south side by the Post Road, but there are no roads on the site. The section is three miles northeast of the Minto village limits. The nearest permanent dwellings are less than a mile away along the Post Road. The land in this section is privately owned by one individual.

FORESTRY

Section III H has a total land area of 24 acres, none of which is contoured. All of the area is forested land; 16 acres are planted with softwoods and eight acres are regenerating naturally. Eight acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 35 feet.

PONDS

One pond in this section (#550) was designated as a priority pond. Its pH was 2.5 and its depth, 19 feet. The banks adjacent to the pond had a slope of 45°. Access to the pond was good. The pond area has been used for dumping garbage.

SOILS

One soil sample was collected in this section. Analysis showed a pH of 5.8, very low levels of phosphorus, medium levels of potassium and very high levels of magnesium and calcium. The soil texture is predominantly clay; the dominant parent material is shale.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with ten species being identified.

Non-vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION III I: SALMON HARBOUR MINE

GENERAL DESCRIPTION

Section III I of the Salmon Harbour Mine is 103 acres in size and was mined in the late 1950's and early 1960's by D. W. Mills. Access to this section is provided by the Post Road and two dirt roads in good condition that pass through the section. The portion of this section that borders on the Salmon River, however, is inaccessible by road.

Section III I is situated three miles northeast of the Minto village limits. This area is owned privately by three individuals. The nearest permanent dwellings are one mile away along the Midland Road. It should be noted that this area includes a graveyard and a wood waste dump.

Figure 11 - Wood waste from the Irving Sawmill at Chipman has been disposed of in an old mine cut near Salmon Harbour since 1983. Previously, wood waste from the mill was disposed at a site near Chipman.

FORESTRY

Section III I has a total land area of 95 acres, none of which is contoured. All of the area is forested; 44 acres are planted with softwoods, and 51 acres are regenerating naturally. Fifty one (51) acres are designated as "non-contoured, not planted and openly stocked". The spoil piles in this section have an average slope of 30° and an average height of 35 feet.

PONDS

Two ponds in this section were designated as priority ponds. These ponds were not surveyed because they were inaccessible.

SOILS

One soil sample was collected from Section III I. Analysis revealed a soil pH of 4.3, low levels of phosphorus, medium levels of potassium and calcium, and very high levels of magnesium. The soil texture for this area is clay and sand; the parent material is a combination of shale and sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 0-5% to 30-35% with the average being 18%. Twenty-four species of vascular plants were identified.

Non-vascular Plants (Lichens)

Three lichen species, Stereocaulon paschale, Cladonia fimbriata, and Cladonia multiformis, were identified from the transects in this section. Crustose lichens were also abundant.

SECTION III J: SALMON HARBOUR MINE

GENERAL DESCRIPTON

Section III J of the Salmon Harbour Mine is 2220 acres in size. Shaft mining was carried out in the northern part of this section between 1935 and 1936 by R. Swift. D. W. Mills began strip-mining this area in 1952. From 1978 to present, the area has been mined by the 8200 dragline belonging to N. B. Coal Limited. Active mining is now located in the mid-western part of this section.

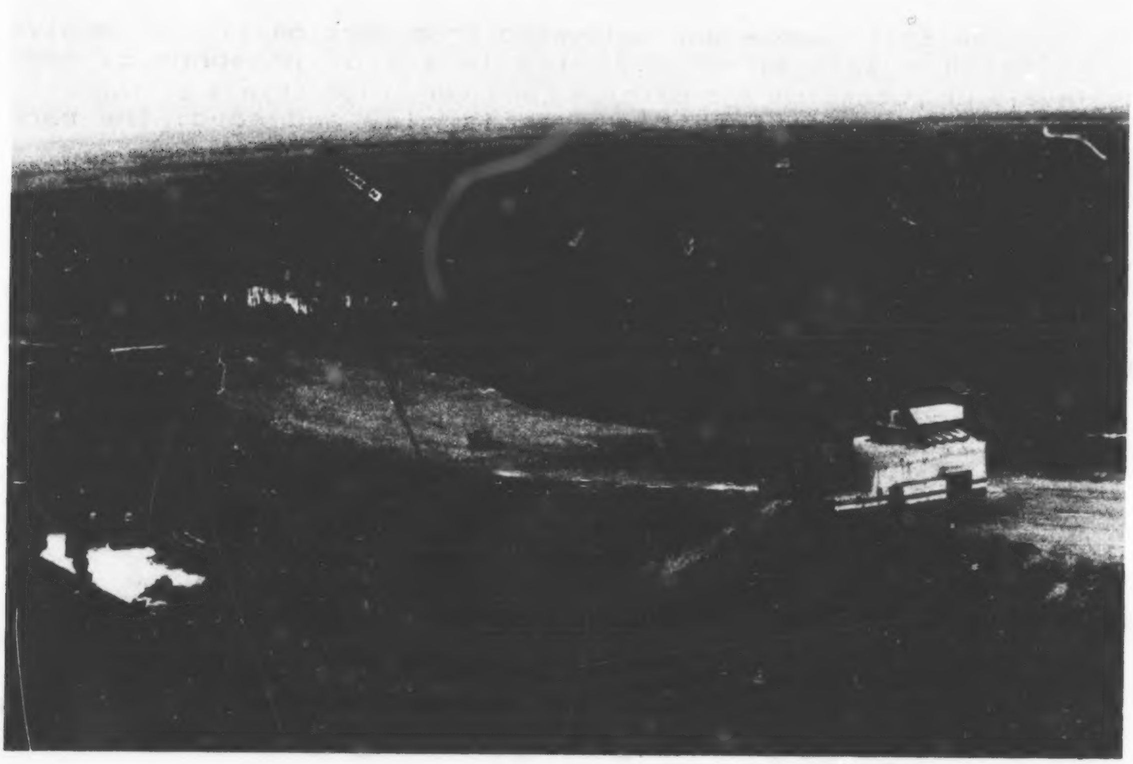


Figure 12 - 8200 Dragline at the Salmon Harbour Mine - This is the largest of the draglines used in the Minto-Chipman area. It mines approximately 100 acres per year and produces about 270,000 tons of coal per year.

Section III J is three miles northeast of the Minto village limits. The Post Road follows the section's northern boundary; three roads enter the section from this road. Two of these roads go through Section III J and join in the south to form one road which follows the transmission lines to Newcastle Centre. The other follows the northeastern border of the section, goes through III K and re-enters III J. This road then joins the others to form one road. These roads all provide good access to Section III J. There are more roads on-site but not all are in good condition.

Figure 13 - 8200 Dragline at the Salmon Harbour Mine - Drilling is in progess in the foreground of this photograph. Spoil piles are shown at the left of the picture. The active mine cut is approximately 100 feet deep.

N. B. Coal Ltd. and ten individuals own 463 acres of land in Section III J. The remaining area, 1757 acres, is Crown land. The nearest permanent dwellings are less than a mile away along the Post Road. The only use of this site, other than mining, was determined to be angling of certain ponds stocked by the Department of Natural Resources.

FORESTRY

Section III J has a total land area of 2064 acres, of which 252 acres are contoured. Approximately 1147 acres are forested and 917 acres have no tree life. Of the forested land, 318 acres are planted with Black Locust, Red Pine, and Jack Pine, and 829 acres are regenerating naturally. Twelve thousand and fifty four (1254) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 25° and an average height of 45 feet.

Figure 14 - Salmon Harbour/Midland Mine - Non-contoured, naturally regenerating lands are shown in the foreground; a non-contoured, planted area is shown at the right of the photograph; and in the background non-contoured spoil piles are visible.

PONDS

Section III J has 16 priority ponds; twelve were surveyed.

The priority ponds that were not surveyed were either inaccessible or on land mined since 1977. The pH's of the twelve ponds ranged from 5.5 to 7.0, while pond depths were between 10 and greater than 50 feet. The average slope of the banks adjacent to the ponds tested was 40 degrees. Access to three ponds (#586, #588, and #610) is poor; accessibility to nine ponds (#'s 564, 573, 587, 589, 591, 592, 595, 605, and 613) is fair to good. These ponds have various uses including wildlife habitat for beaver and ducks, angling and the dumping of garbage.

Three highwall ponds (#573, #605, and #613) were surveyed. These were found to have slopes varying from 80° to 90° on one side of the pond to 30° on the other. The height of the highwalls above water ranged from 50 to 70 feet; the depth of the highwall ponds ranged from 15 to 37 feet.

STREAMS

One stream was sampled in Section III J in early September, 1984. It had a pH of 7.0 and a flow of 9.61 ft^3/sec.

SOILS

Eleven soil samples were collected in Section III J. Analysis revealed a pH range between 4.4 and 4.9, very low to medium levels of phosphorus and potassium, and very low to very high levels of calcium and magnesium. The soil texture is a clay and sand mixture while the parent material is a combination of shale and sandstone.

VEGETATION

Vascular Plants

Four transects were completed in this area. The vegetation density ranged from 0-5% to 30-35% with the average being 13%. Fifty two species of vascular plants were identified from these transects.

Non-Vascular Plants (Lichens)

Eight lichen species were identified from the transects in this section. Cladonia cristatella was the most abundant.

SECTION III K: SALMON HARBOUR MINE

GENERAL DESCRIPTION

Section III K of the Salmon Harbour Mine is 134 acres in size. Some shaft mining occurred at this site in the early years and the area was strip-mined between the years 1952 and 1969. Good access to this section is provided by a road originating from the Post Road and entering the northern part of the section. This road passes through the mine site and exits in the southern portion of the section. Some permanent dwellings are located along this road where it enters the mined area. The N. B. Coal Bucket Repair Shop is situated in the southwest corner of the mine.

Section III K is four miles northeast of the Minto village limits. This mine is Crown land with the exception of 4 acres which is privately owned by two individuals.

FORESTRY

Section III K has a total land area of 112 acres, none of which is contoured. All of the area is naturally regenerating forest as no planting has taken place. Fifty eight (58) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 18 feet.

PONDS

Two ponds in this area (#627 and #633) were designated as priority ponds. These ponds had a pH of 6.0 and pond depths of 25 and 40 feet. The pond banks had a slope of approximately 35°. Roads to both ponds were good, but the access to the shoreline of pond #627 was poor.

SOIL

One soil sample was collected from Section III K. Analysis showed a pH of 4.2, very low levels of phosphorus and calcium, and low levels of magnesium and potassium. The soil texture is clay and sand; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 0-5% to 10-15% with an average of 7.5%. Twenty eight species were identified from this area.

Non-Vascular Plants (Lichens)

Seven lichen species were identified from the transects in this section. Cladonia cristatella, Cladonia chlorophaea, and Baeomyces fungoides were the most abundant. Crustose lichens were also abundant.

Figure 15 - Salmon Harbour Area - Section III J and Section III K are shown in this photograph.

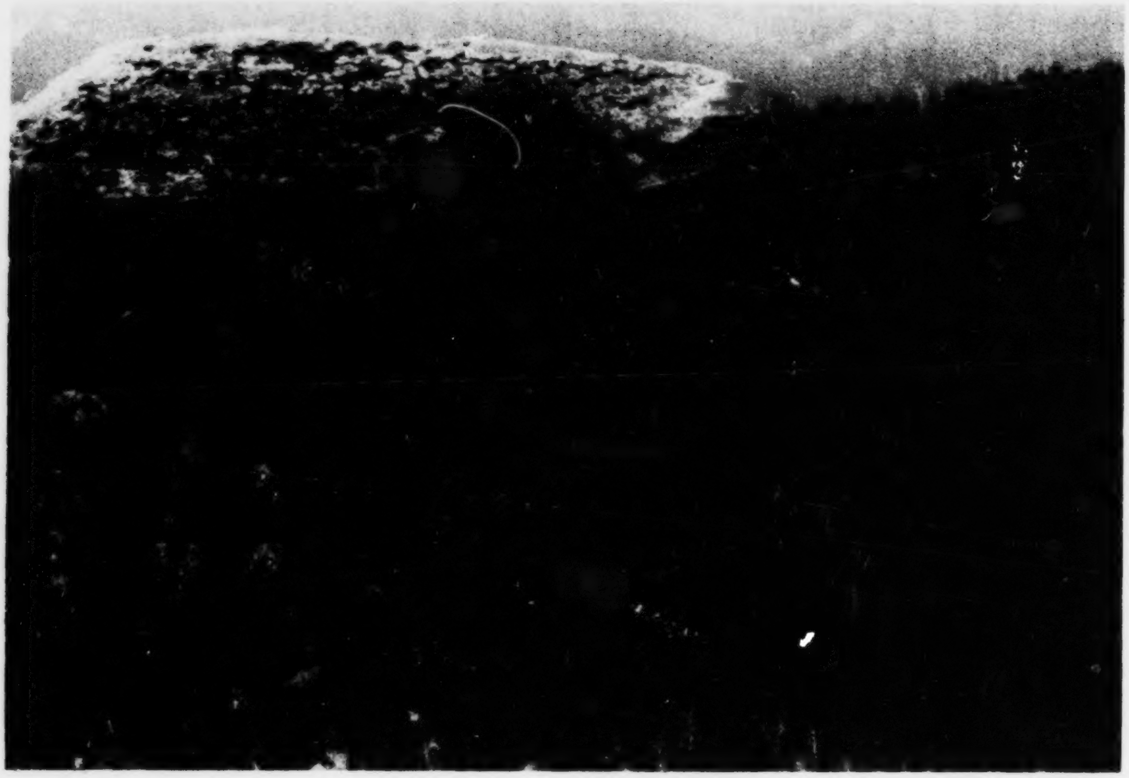
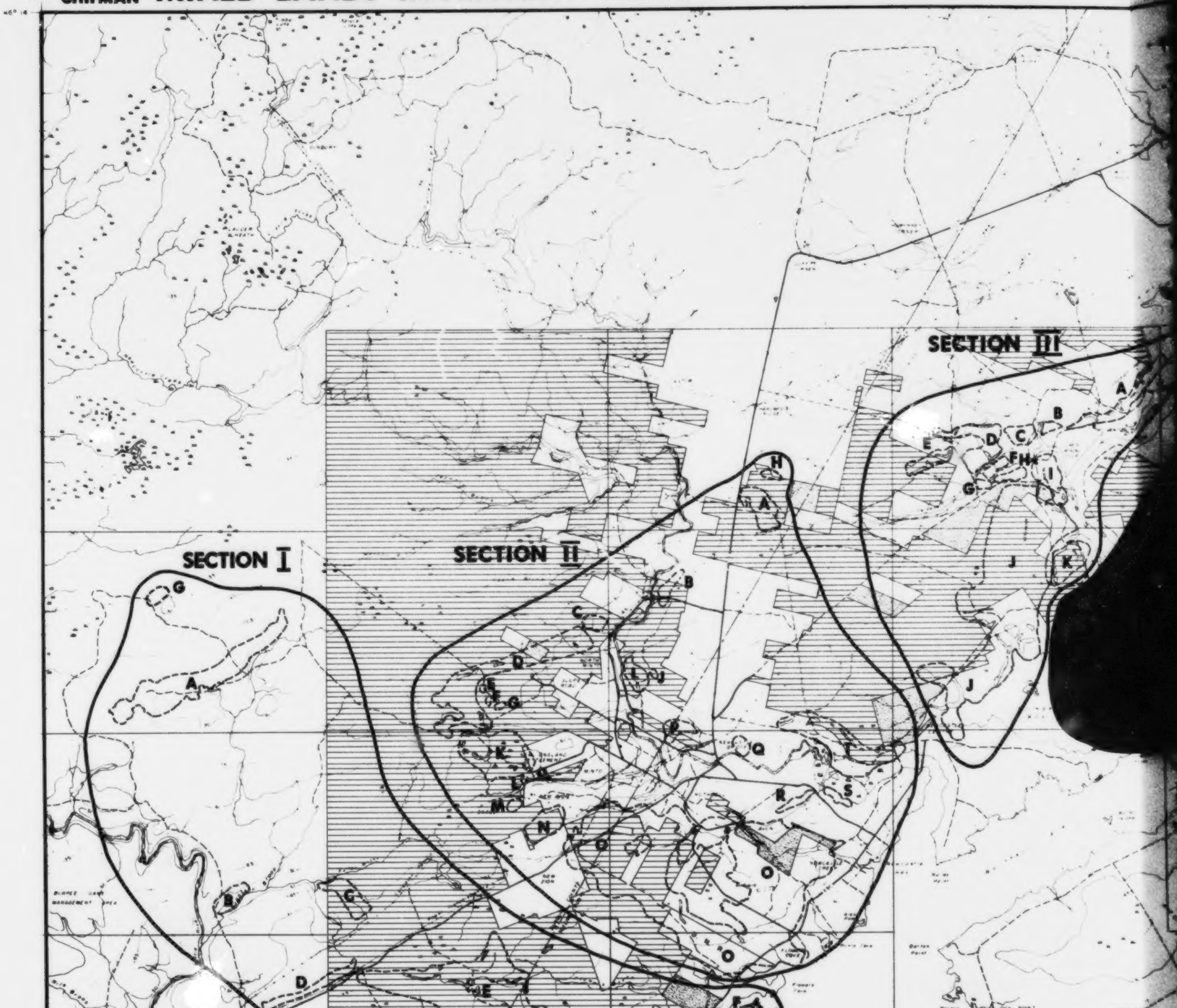


Figure 16 - Salmon Harbour Area - Section III K was strip mined in the 1950's and 1960's. It is a non-contoured, naturally regenerating area as shown. Grand Lake is visible at the top of this photograph.

MINTO - CHIPMAN MINED LANDS INVENTORY PROJECT


46° 15'
66° 15'
SECTION I
SECTION II
SECTION III
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
BURPEE GAME MANAGEMENT AREA
ACADIA FOREST EXPERIMENTAL STATION
MINTO
NEW ZION
GRAND LAKE
46° 00'
66° 00'

Prepared by:

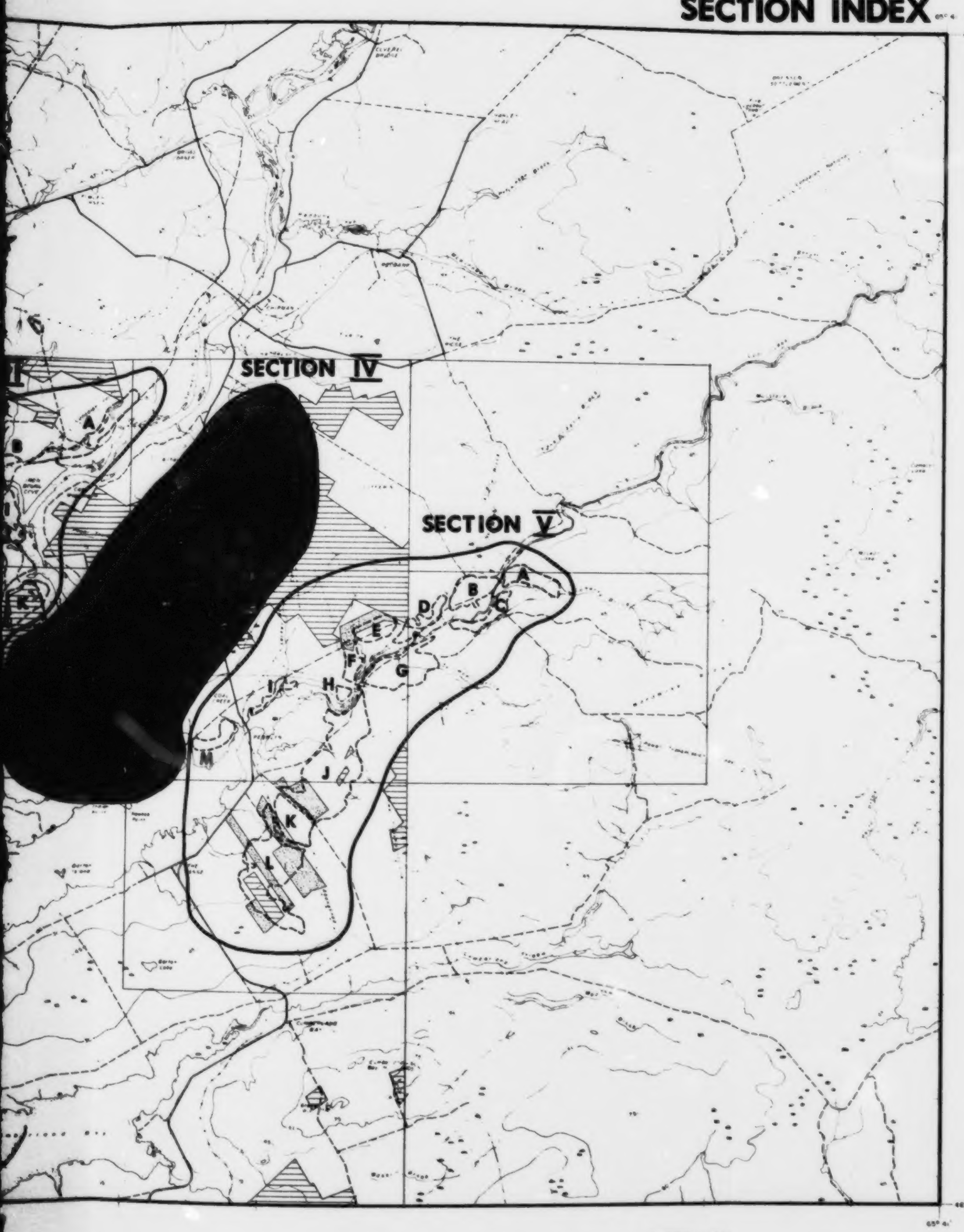
THREE-D GEOCONSULTANTS LIMITED

SCALE 1:50,000

Metres 1000 0 1000 2000 3000 4000 5000

CONTOUR INTERVAL 15 METRES
(ERROR OF ±16%)

SECTION INDEX



MINING LICENCE
No: 1307

—LEGEND—

———	Main roads
- - - -	Secondary roads and trails
· · · · ·	Railway
·——·	Power transmission line
○	Lake or pond
〰	Rivers and streams
-·-	Wetland
—	Topographic contours (note For the sake of simplified representation, the values converted to the metric system are 1.6 % below their actual values)
▬	Section boundary
H◌	Mined area index
☐	Private property
▤	Crown land
▨	N.B. Coal property
◌	Area disturbed by Strip Mining

1:10,000 Topography (Ortho) Index

	21 J/01 W3	21 J/01 W4	21 I/04 U3	21 I/04 U4	21 I/04 V3
21 J/01 V2	21 J/01 W1	21 J/01 W2	21 I/04 U1	21 I/04 U2	21 I/04 V1
21 J/01 S4	21 J/01 T3	21 J/01 T4		21 I/04 [illegible]	
21 J/01 S2	21 J/01 T1	21 J/01 T2			

Prepared for

NB
COAL LTD.

SECTION IV A: DUFFERIN MINE

GENERAL DESCRIPTION

The Dufferin Mine is 494 acres in size. At present the southeastern area is being actively mined by N. B. Coal Ltd. (9W Dragline). This end of the section is newly mined. The northern portion was mined by the Lafferty Brothers and the King Mining Company between the years 1937 and 1946. In the early 1940's, L. Swift also mined this area.

Four roads provide access to this section. One road enters the northern part of the section off the Dufferin Road. This runs part way through the mine but varies from fair to poor condition. The remaining three roads enter the mine site from the west side. The first and second run midway through the width of the section but the most southerly road goes through the length of the area providing better access. This latter road is in good condition except for the areas that are not covered with crushed rock.

Approximately one third of the northern part of Section IV A is within the Chipman village limits. There are homes located on the Dufferin Road and on Highway 10 within one half mile of the section. One hundred and sixty two (162) acres of this section are owned privately by nine individuals; the remainder is Crown land.

FORESTRY

The Dufferin Mine has a total land area of 469 acres, of which 21 acres are contoured. Four hundred and twenty three (423) acres of this area are forested; 46 acres have no tree life. Of the forested land, 18 acres are planted with Red Pine, and 405 acres are regenerating naturally. Three hundred and thirteen (313) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 28° and an average height of 35 feet.

PONDS

Four ponds in Section IV A were designated as priority ponds, however, only one, #638, was accessible. This highwall pond had a pH of 6.0, a depth of 27 feet and a highwall height of 30 feet. The slope of the pond banks are 85o on one side and 30o on the other.

Access to this pond site by road is fair, but access to the pond shore is very poor and is possible only on foot. This pond has been used as a dumpsite for wood waste.

STREAMS

One stream, Wilson Brook, was sampled in Section IV A. It was found to have a pH of 6.5, and a flow 3.34 ft^3/sec in early October, 1984.

SOILS

Three soil samples were gathered from the Dufferin Mine. Soil analysis revealed pH's ranging from 4.3 to 5.4, very low to low levels of phosphorus, low to medium levels of potassium, medium to very high levels of calcium, and medium to high levels of magnesium. The dominant soil texture is clay with some silt. The parent material is primarily sandstone with some shale.

VEGETATION

Vascular Plants

Two transects were completed in this section. Both had a vegetation density of 0-5%. Eleven vascular plant species were identified from this area.

Non-Vascular Plants (Lichens)

Six lichen species were identified from the transects in this section. *Cladonia cristatella* was the most abundant.

SECTION IV B: COAL CREEK MINE

GENERAL DESCRIPTION

The Coal Creek Mine is 726 acres in size and is located two miles south of the Chipman village limits next to Highway 10. One road, which is in good condition, heads west from the highway through the section. This road exits from the southwest portion of the mine site and follows the Salmon River to Section IV E. Section IV B was mined between the years 1970 and 1971 by N. B. Coal Ltd.

The nearest permanent dwellings are less than one mile away along Highway 10. Three individuals own 266 acres of this section; the remaining area is Crown land.

FORESTRY

Section IV B has a total land area of 711 acres, of which 297 acres are contoured. Three hundred and thirty eight (338) acres are forested and 373 acres have no tree life. Of the forested area, 319 acres are planted with Red Pine and 19 acres are regenerating naturally. One hundred and twenty five (125) acres are designated as "non-contoured, not planted, and openly stocked".

The spoil piles in this section have an average slope of 20° and an average height of 20 feet.

PONDS

Three ponds in this area were designated as priority ponds, however pond #696 was not surveyed because it had been partially filled in. The other two ponds have pH's of 5.5 and 7.0, and depths of 9 and 10 feet. The slope of the pond banks varied from 30° to 40°. Roads to these ponds are in fair to good condition, however access to the shorelines is poor. Signs of beaver activity were observed near pond #690.

STREAMS

Two streams were surveyed in Section IV B. They had pH's of 6.4 and 7.0, and flows of 0.10 ft^3/sec (September, 1984) and 1.52 ft^3/sec (August, 1984).

SOILS

Four soils samples were gathered from the Coal Creek Mine. Soil analysis revealed a pH range of 4.5 to 5.9, very low to low levels of phosphorus, low to very high levels of potassium, medium to very high levels of calcium, and high to very high levels of magnesium. The dominant soil texture is clay and sand; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 20-25% to 70-75% with the average being 48 %. Forty-two species were identified from this area.

Non-Vascular Plants (Lichens)

No lichens were found on the transects in this section.

SECTION IV C: LONG CREEK MINE

GENERAL DESCRIPTION

The Long Creek Mine is 54 acres in size and is located on a peninsula of land between Salmon River and Long Creek. This area was mined about 1950.

Access to this section is possible via a causeway that crosses Long Creek from the Coal Creek Mine, Section IV B. This causeway is not passable in the spring due to high water levels, but at other times of the year, four-wheel drive vehicles can cross it. There are two roads in the Coal Creek Mine that lead to the causeway. The road from the south is the only one that is passable, however, it is blocked off just before the causeway can be reached. Northrup Drive which runs from Chipman south toward the section, passes the Chipman airstrip and Camp Wegesegum but becomes impassable.

This section is three miles south of Chipman village limits and there are no homes within one mile of the site. The area is owned privately by one individual.

FORESTRY

Section IV C has a total land area of 51 acres, none of which is contoured. All of this section is naturally regenerating forest as no planting has taken place.

The spoil piles in this section have an average slope of 23° and an average height of 10 feet.

PONDS

Two ponds were designated as priority ponds in Section IV C, however they are inaccessible.

SOILS

One soil sample was gathered from this section. Soil analysis revealed a pH of 4.8, low levels of phosphorus, medium levels of calcium, high levels of potassium, and very high levels of magnesium. The dominant soil texture is clay and sand; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this area. The vegetation density was 80-85% with twenty-eight species being identified.

Non-Vascular Plants (Lichens)

One lichen species, Cladonia verticellata, was identified from the transect in this section.

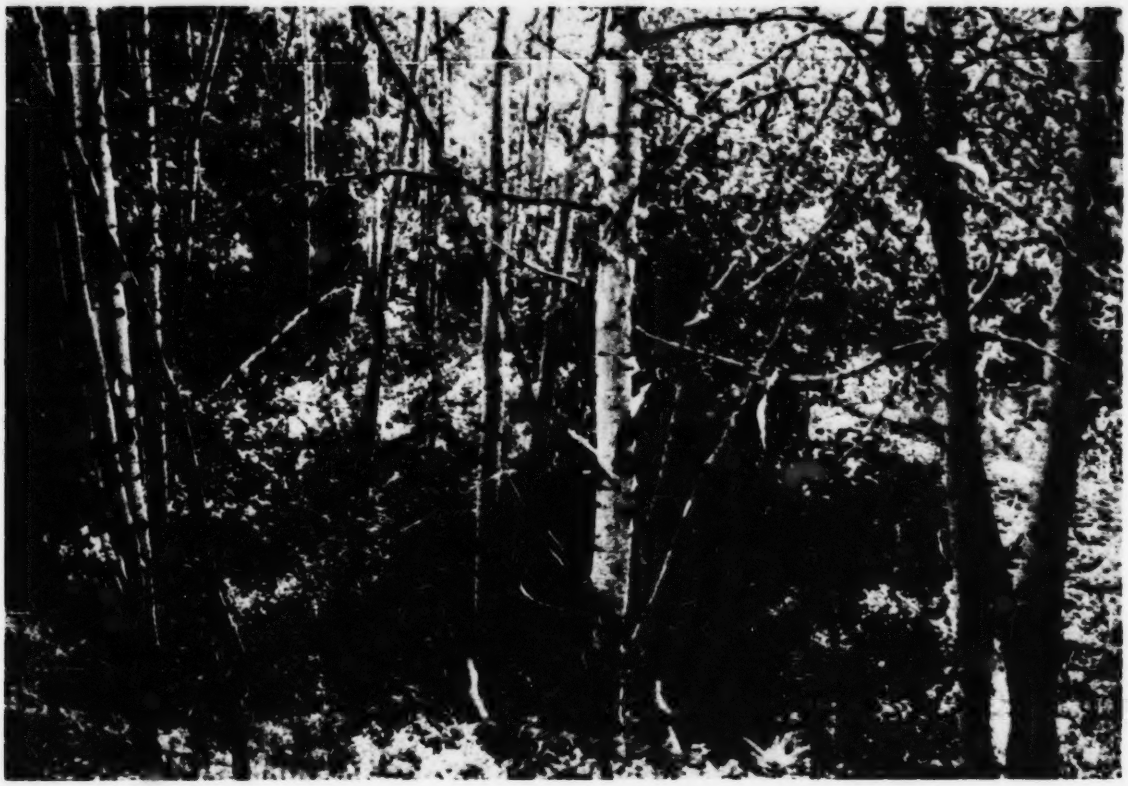


Figure 17 - Section IV C is a non-contoured, naturally regenerating area that was mined approximately 35 years ago (1950). Natural revegetation in this section is remarkable.

SECTION IV D: SALMON HARBOUR MINE

GENERAL DESCRIPTION

Section IV D of the Salmon Harbour Mine is 652 acres in size and is located on a peninsula of land at the mouth of the Salmon River. This section is outside village limits, midway between Minto and Chipman, and is 1.5 miles from permanent dwellings. This area was shaft mined in the early years and was strip-mined in the mid-1950's by the Miramichi Lumber Company.

This section can be reached by two roads, one from Section III K and the other from Section III J. The former enters Section IV D from the north and is in poor condition (four-wheel drive vechicles only). The latter enters from the west, along the transmission lines and runs through the mine site. This road is in fair to good condition. There are several roads on site, most of which are in good condition.

Section IV D has many large ponds, and, given it's location on the Salmon River, provides a park-like setting. Most of these ponds are Department of Natural Resources angling ponds (Region 6) and are used by local fisherman. Approximately half of this section, or 363 acres, is privately owned by two individuals and the Bishop Lumber Company. The remainder of the area is Crown land.

FORESTRY

Section IV D has a total land area of 479 acres, none of which is contoured. All of the area is forested; 292 acres are planted with Black Locust, and 187 acres are regenerating naturally. Twenty nine acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 29° and an average height of 15 feet.

PONDS

Thirteen ponds were considered to be priority ponds in Section IV D and only one was inaccessible. The remaining 12 ponds were found to have pH's ranging from 4.0 to 7.0, and depths ranging from 5 to 50+ feet. The slope of the pond banks averages 35o. Accessibility to these ponds is good by road (#'s 717, 718, 719, 721, 722, 726, 727, 732, 737, 739, and 743) except for pond #733, but access to shorelines varies from poor to good. One pond is a highwall pond (#737). It has a depth of 41 feet, a highwall height of 40 feet, and, a slope of 90o on one side and 30o on the other. The ponds in this area have various uses including angling and habitat for ducks and beaver.

SOILS

Four soil samples were gathered from Section IV D. Analysis revealed a pH range of 3.7 to 5.5, very low to low levels of phosphorus and potassium, very low to high levels of calcium, and low to medium levels of magnesium. The dominant soil texture is sand with some clay; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this area. The vegetation density ranged from 0-5% to 15-20% with the average being 10%. Twenty-three species were identified from this section.

Non-Vascular Plants (Lichens)

One lichen species, *Cladonia cristatella*, was identified from the transects in this section.

SECTION IV E: MORAY POINT MINE

GENERAL DESCRIPTION

The Moray Point Mine is 354 acres in size and is located at the mouth of Salmon River. This area was strip-mined by D. W. Mills between 1955 and 1960.

A road off the Salmon River Mouth Road enters the section in the south and runs through the length of the area and north to Section IV B. This road provides good access to the area and there are several good roads leading off it.

Section IV E is outside village limits midway between Minto and Chipman. There are some cottages nearby but few permanent dwellings within one mile. All of this section is privately owned by five individuals.

FORESTRY

Section IV E has a total land are of 301 acres, none of which is contoured. All of the area is forested; 47 acres are planted with pine and 254 acres are regenerating naturally. Two hundred and fifty four (254) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 29° and an average height of 20 feet.

PONDS

Seven ponds in Section IV E were designated as priority ponds, but one (#726) is inaccessible. The six ponds that were surveyed have pH's ranging from 6.0 to 6.5, and pond depths from 12 to 31 feet. The average slope of the spoil piles adjacent to the ponds is 45°. Pond #617, #757, #758 and #855 have poor accessibility both by road and to the shore. Pond #760, and #854 have fair to good accessibility. Some of these ponds are used by beaver, and fish were sighted in two of the ponds. Four of these ponds are highwall ponds, #617, #760, #854, and #855. Their depths vary from 12 to 31 feet; the height of the highwalls above water is from 25 to 40 feet. Their shore slopes are 90° on one side and from 30 to 45° on the other.

SOILS

Two soil samples were gathered from Section IV E. Analysis showed a pH range of 3.8 to 4.9, low to very low levels of phosphorus, low to medium levels of potassium, high to very high levels of calcium, and very high levels of magnesium. The dominant soil texture is sand and silt. The dominant parent material is shale.

VEGETATION

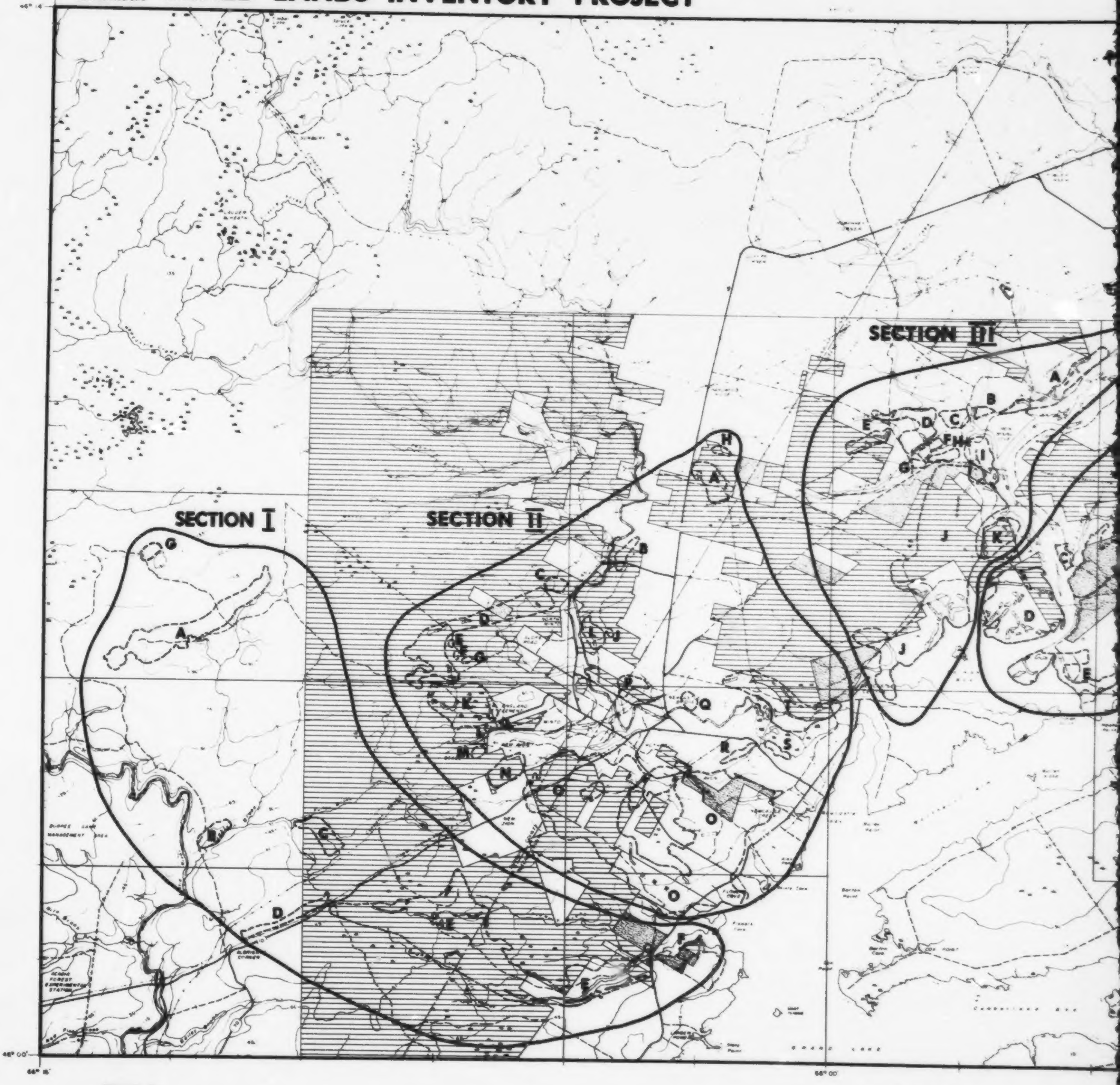
Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 5-10% to 20-25% with the average being 15%. Thirty species were identified.

Non-Vascular Plants (Lichens)

Eight lichen species were identified from the transects in this section. *Cladonia capitata* and *Cladonia verticellata* were the most abundant.

MINTO - CHIPMAN MINED LANDS INVENTORY PROJECT


SECTION I
SECTION II
SECTION III
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
GRAND LAKE
CUMBERLAND BAY
46° 00'
66° 00'

Prepared by:

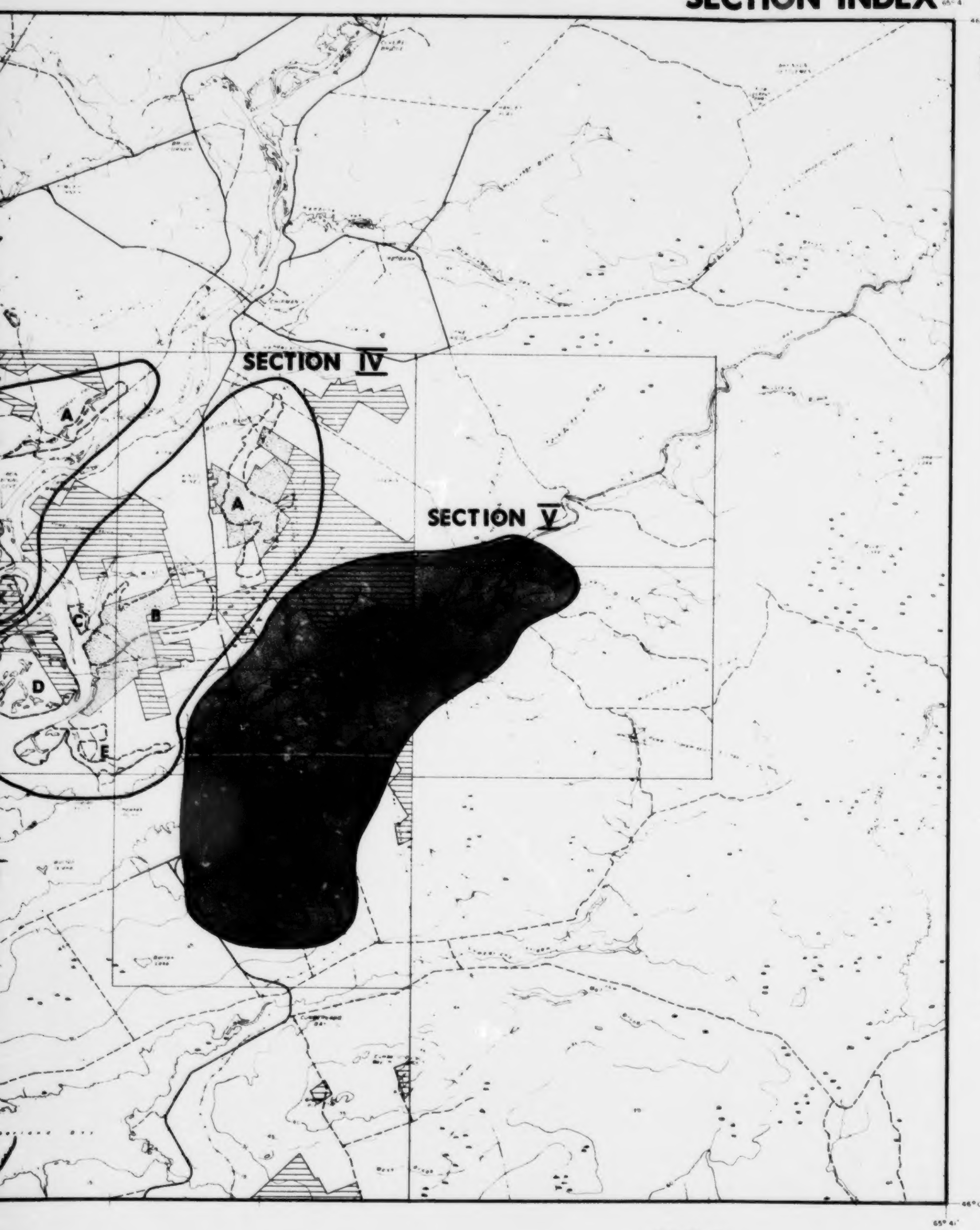
THREE-D
GEOCONSULTANTS
LIMITED

SCALE 1:50,000

Metres 1000 0 1000 2000 3000 4000 5000

CONTOUR INTERVAL 15 METRES
(ERROR OF -1.6%)

SECTION INDEX



MINING LICENCE
No: 1307

-LEGEND-

- Main roads
- Secondary roads and trails
- Railway
- Power transmission line
- Lake or pond
- Rivers and streams
- Wetland
- Topographic contours (note For the sake of simplified representation, the values converted to the metric system are 16 % below their actual values)
- Section boundary
- H Mined area index
- ☐ Private property
- ▤ Crown land
- ▨ N.B. Coal property
- Area disturbed by Strip Mining

1:10,000 Topography (Ortho) Index

	21 J/01 W3	21 J/01 W4	21 I/04 U3	21 I/04 U4	21 I/04 V3
21 J/01 V2	21 J/01 W1	21 J/01 W2	21 I/04 U1	21 I/04 U2	21 I/04 V1
21 J/01 S4	21 J/01 T3	21 J/01 T4		21 I/04 R4	
21 J/01 S2	21 J/01 T1	21 J/01 T2			

Prepared for

NB
COAL LTD.

SECTION V A : AVON ROAD MINE

GENERAL DESCRIPTION

The Avon Road Mine is 102 acres is size and was mined by the Avon Coal Company sometime between 1938 and 1959. This section is near Coal Creek, about four miles southeast of the Chipman village limits, and is fairly isolated. The nearest permanent dwellings are in Dufferin about two miles away. A dirt road, which is a continuation of the Avon Road from Pennlyn, is in good condition and provides access to this section.

The land in Section V A is owned by H. J. Crabbe & Sons Ltd.

FORESTRY

Section V A has a total land area of 97 acres, none of which is contoured. This area is naturally regenerating forest as no planting has taken place. All 97 acres are designated as "non-contoured, not planted, and openly stocked".

The spoil piles in this section have an average slope of 22° and an average height of 30 feet.

PONDS

One pond in Section V A was designated as a priority pond. It had a pH of 4.0 and a depth of 9 feet. Access to the pond area and shoreline was good. This pond, #766, is a highwall pond with a 90° slope on one side, and a 30° slope on the other. The highwall bank rises 35 feet above the water level. Swallows use the highwall bank for nesting.

STREAMS

Two streams were sampled in Section V A. Both had a pH of 4.0; their flows ranged from 1.66 ft^3/sec to 1.59 ft^3/sec. The streams were sampled during mid-July, 1984.

SOILS

One soil sample was collected from Section V A. Analysis revealed a pH of 5.1, low levels of phosphorus and magnesium, and very low levels of potassium and calcium. The dominant soil texture is sandy and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 20-25% with eighteen species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

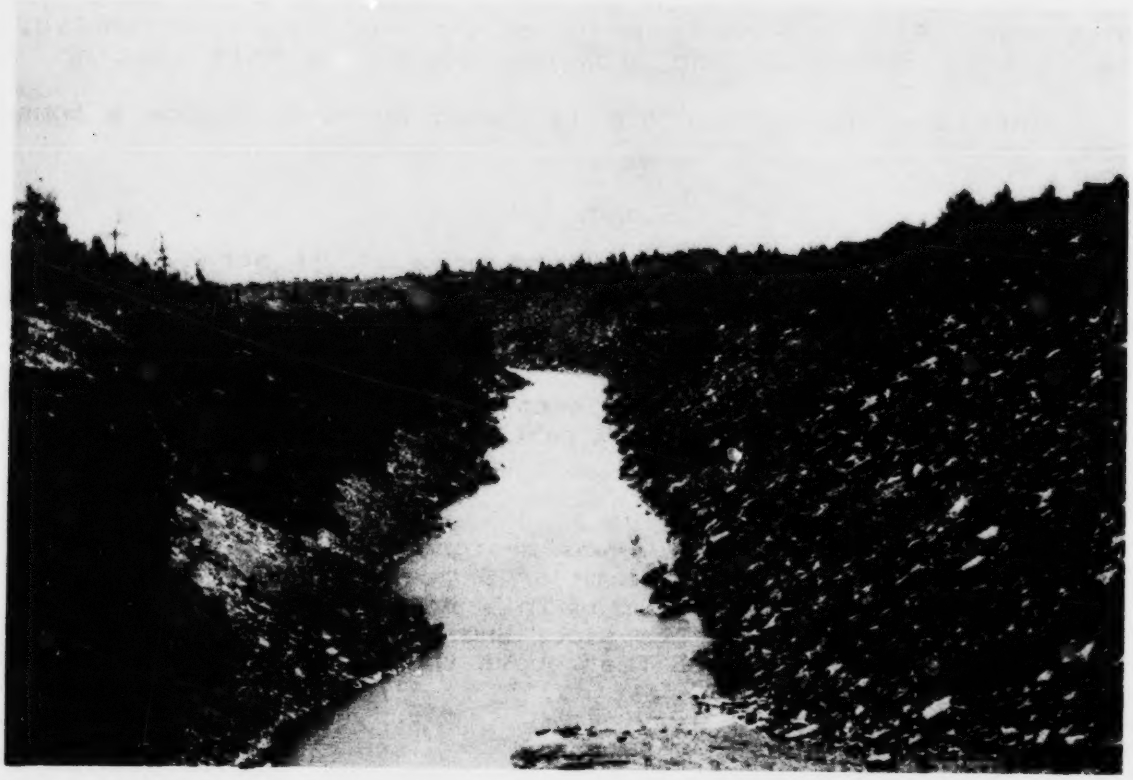


Figure 18 - This highwall is typical of several areas in the northern portion of Section V. The parent material of these areas is predominantly sandstone.

SECTION V B: COAL CREEK ROAD MINE

GENERAL DESCRIPTION

The Coal Creek Road Mine is 146 acres is size and was mined by the Avon Coal Company sometime between 1938 and 1959. This section, located near Coal Creek, is about three miles southeast of the Chipman village limits. The nearest permanent dwellings are about one mile away along the southern edge of Section I D.

There are three dirt roads that provide access to the mine site. The Dufferin Road extends in a southeasterly direction from Chipman and is in good condition. The Coal Creek Road parallels the northern side of Coal Creek and is also in good condition. The Avon Road parallels the southern side of Coal Creek and crosses it before entering this section. This road is the poorest of the three as it is entirely a dirt road and has no bridge where it crosses Coal Creek.

The land in Section V B is owned by N. B. Coal Ltd. and three individuals.

FORESTRY

Section V B has a total land area of 138 acres, none of which is contoured. All of this area is naturally regenerating forest as no planting has taken place. All 138 acres are designated as "non-contoured, not planted, and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 30 feet.

PONDS

Two ponds in Section V B (#770, #774) were designated as priority ponds. These ponds had pH's of 5.5 and 7.0, and depths of 7 and 10 feet. The slope of pond banks adjacent to these ponds was approximately 25°. Access to these ponds was good by road, but neither pond had an accessible shoreline. The ponds are used by beavers and for dumping. Beavers had dammed both ponds.

SOILS

One soil sample was collected from Section V B. Analysis showed a pH of 3.3, very low levels of phosphorus and calcium, low levels of potassium and medium levels of magnesium. The soil texture is mainly sandy and the parent material is predominantly sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 10-15% to 20-25% with the average being 18%. Twenty seven species were identified from this area.

Non-Vascular Plants (Lichens)

Eight lichen species were identified from the transects in this section. *Cladina rangiferina* and *Cladonia cristatella* were the most abundant. Crustose lichens were also common.

SECTION V C : AVON ROAD MINE

GENERAL DESCRITION

The Avon Road Mine is 117 acres in size and was mined by the Avon Coal Company sometime between 1938 and 1959. This section, located about four miles southeast of the Chipman village limits, is fairly isolated. The nearest houses are in Dufferin about two miles away. Two dirt roads, the Avon and Dufferin Roads provide access to this section. The Dufferin Road extends in a southeasterly direction from Chipman and crosses Coal Creek into this section. There is no bridge at this crossing. The Avon Road is the better of the two roads and passes directly through the section.

The land in Section V C is owned by the Bishop Lumber Company, H. J. Crabbe & Sons, and one individual.

FORESTRY

Section V C has a total land area of 115 acres, none of which is contoured. One hundred and eleven (111) acres are forested; four acres have no tree life. All of the forested land is regenerating naturally as no planting has taken place. One hundred and fifteen (115) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 29° and an average height of 30 feet.

STREAMS

Two streams were sampled in Section V C. They had pH's of 5.5 and 6.0; their flows were 0.64 and 0.76 ft^3/sec. These streams were sampled in mid-July, 1984.

SOILS

One soil sample was taken from Section V C. Analysis showed a pH of 4.3, very low levels of phosphorus, low levels of potassium, and medium levels of calcium and magnesium. The soil texture is predominantly sand and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 10-15% with twenty three species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION V D: COAL CREEK ROAD MINE

GENERAL DESCRIPTION

The Coal Creek Road Mine is 118 acres in size and was mined by the Avon Coal Company between 1938 and 1959. This section is located near Coal Creek about three miles southeast of the Chipman village limits. Except for one home along the section's southern border, the nearest permanent dwellings are those of Dufferin.

Two dirt roads, both in good condition, provide access to this mine site. The Coal Creek Road parallels Coal Creek and enters the western side of the mined area. The Dufferin Road extends in a southeasterly direction from Chipman and enters the northern part of the section.

Part on this section is owned by the Crown; the other portion is owned privately by two individuals.

FORESTRY

Section V B has a total land area of 109 acres, none of which is contoured. All of the area is naturally regenerating forest as no planting has taken place. Ninety four (94) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30^{o} and an average height of 20 feet.

PONDS

One pond in Section V D (#775) was designated as a priority pond. It is a highwall pond with a pH of 6.0, depth of 18 feet, 30^{o} slopes on one side and 90^{o} slopes on the other. The height of the highwall is 15 feet. Roads in the vicinity provide good accessibility, however, access to the pond's edge is poor.

STREAMS

Two streams were sampled in this section. Both had a pH of 6.0 while their flows were 3.05 ft^3/sec and 5.61 ft^3/sec. These streams were sampled in July, 1984.

SOILS

One soil sample was collected from this section. Analysis revealed a pH of 3.7, very low levels of phosphorus, medium levels of potassium, very high levels of calcium and high levels of magnesium. The soil texture is sand and clay, and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 30-35% with thirty one species identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION V E : COAL CREEK ROAD MINE

GENERAL DESCRIPTION

The Coal Creek Road Mine is 86 acres in size and was mined by the Avon Coal Company sometime between 1938 and 1959. This area is near Coal Creek three miles southeast of the Chipman village limits. The nearest houses are in Coal Creek and Dufferin, each about two miles away. Access to this section can be gained by two dirt roads, both in good condition. One of these is the Coal Creek Road; the other is a continuation of the Dufferin Road.

This section is privately owned by one individual.

FORESTRY

Section V E has a total land area of 76 acres, none of which is contoured. It is naturally regenerating forest as no planting has taken place. Sixty three (63) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 25 feet.

PONDS

Two ponds in Section V E (#786 and #789) were designated as priority ponds. These ponds have a pH of 7.0 and depths ranging from 17 to 24 feet. The slopes of the spoils adjacent to the ponds is approximately 35° with the exception of one end of pond #786 which is 90°. Accessibility to both ponds is poor by road and on foot. The highwall pond (#786) has a depth of 17 feet, and a highwall height of 25 feet. Both ponds showed signs of use by beaver and ducks.

SOILS

One soil sample was collected from Section V E. Analysis showed a pH of 4.9, low levels of phosphorus and potassium, very low levels of calcium and medium levels of magnesium. The soil texture is sand and clay; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 20-25% to 40-45% with the average being 33%. Twenty nine species were identified in this area.

Non-Vascular Plants (Lichens)

Two lichen species, *Baeomyces fungoides* and *Cladonia cristatella*, were found in nearly equal abundance on the transects in this section.

SECTION V F : COAL CREEK ROAD MINE

GENERAL DESCRIPTION

The Coal Creek Road Mine is 103 acres in size and was mined between 1938 and 1959 by the Avon Coal Company. This area is located near Coal Creek, three miles south of the Chipman village limits. The nearest permanent dwellings are about two miles away in Coal Creek.

The Coal Creek Road parallels the northern side of Coal Creek and provides good access to this section. The Dufferin Road extends in a southeasterly direction from Chipman and also provides good access to the mine site.

This section is privately owned by the Bishop Lumber Company and two other individuals.

FORESTRY

Section V F has a total land area of 100 acres, none of which is contoured. All of the area is naturally regenerating forest as no planting has taken place. Seventy five (75) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 25 feet.

PONDS

One pond in Section V F (#792) was designated as a priority pond. It had a pH of 6.0 and a depth of 10 feet. This is a highwall pond with 90° slopes on one side and 30° slopes on the other. The highwall rises 20 feet above the pond. Roads to the pond site are in good condition, but the shoreline has poor accessibility. Some dumping was observed in this area.

STREAMS

One stream, Leckey Brook, was sampled in Section V F. Its pH was 6.0 while its flow was 1.80 ft^3/sec. This stream was sampled in mid-July, 1984.

SOILS

One soil sample was taken from Section V F. Analysis revealed a pH of 4.3, low levels of phosphorus, very low levels of potassium, medium levels of calcium and high levels of magnesium. The dominant soil texture is sandy; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 30-35% with thirty species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION V G : AVON ROAD MINE

GENERAL DESCRIPTION

The Avon Road Mine is 267 acres in size and is located about four miles south of the Chipman village limits along Coal Creek. The northern portion of this area was mined by the Avon Coal Company sometime between 1938 and 1959. The southern portion has been mined since 1977 and is presently mined by Knox Contracting for N. B. Coal Limited.

The Avon Road, which parallels the south side of Coal Creek, is in good condition and provides access to the northwestern part of the mine.

This section is owned by J. D. Irving Ltd. and H. J. Crabbe & Sons Ltd. The nearest permanent dwellings are located in Pennlyn about two miles away.

FORESTRY

Section V G has a total land area of 267 acres, of which 14 acres are contoured. One hundred and eighty five (185) acres are forested and 82 acres have no tree life. The forested land is regenerating naturally as no planting has taken place. One hundred and thirty nine (139) acres are designated as "non-contoured, not planted, and openly stocked".

The spoil piles in this section have an average slope of 29° and an average height of 30 feet.

PONDS

One pond in Section V G was designated as a priority pond. It had two parts (#806A, #806B). Its pH was 6.0 and its depth was 5 feet. Access to this pond is good by road and on foot. The slope of the spoils adjacent to the pond is approximately 22°. Signs of beaver were observed in this area.

STREAMS

One stream was sampled in Section V G. Its pH was 6.0 and its flow was 2.12 ft^3/sec. This stream was sampled in mid-July, 1984.

SOILS

One soil sample was collected from Section V G. Analysis revealed a pH of 4.9, very low levels of phosphorus, low levels of potassium, and medium levels of calcium and magnesium. The dominant soil texture is sandy; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 20-25% with sixteen species being identified.

Non-vascular Plants(Lichens)

Two lichen species were identified from the transect in this section. Cladonia cristatella was the most abundant.

SECTION V H : COAL CREEK ROAD MINE

GENERAL DESCRIPTION

The Coal Creek Road Mine is 26 acres in size and was mined by Jimmy Fitton in the 1930's. This area is located near Coal Creek about three miles south of Chipman's village limits. The nearest permanent dwellings are in Coal Creek about one and a half miles away.

Access to Section V H is possible by using the Coal Creek or Dufferin Road to reach Section V F, and travelling from there on foot to Section V H. There is a road that enters this section but it is grown up to such an extent that its use is impossible.

This section is owned privately by the Bishop Lumber Company and two other individuals.

A noteworthy feature of Section V H is the extent of natural regeneration that has occurred at this site. This is one of the most heavily vegetated areas of the Minto-Chipman mined lands.

FORESTRY

Section V H has a total land area of 26 acres, none of which is contoured. It is naturally regenerating forest as no planting has taken place.

The spoil piles in this section have an average slope of 30° and an average height of 20 feet.

SOILS

No soil samples were collected from Section V H.

VEGETATION

Vascular Plants

One transect was completed in this area. The vegetation density was 70-75% with twenty one species being identified.

Non-Vascular Plants (Lichens)

Two lichen species were identified from the transect in this section. *Peltigera canina* was the most abundant.

SECTION V I : COAL CREEK ROAD MINE

GENERAL DESCRIPTION

The Coal Creek Road Mine is 31 acres in size and is located about three miles south of the Chipman village limits near the community of Coal Creek. The western part of this section was mined in the 1940's by Frank Horgan. The eastern part was mined in the early 1970's by N. B. Coal Ltd. and is closer to the Coal Creek Road and the transmission lines. The Coal Creek Road, which parallels the northern side of Coal Creek, provides good access to this section. The nearest permanent dwellings are less than a mile away in Coal Creek. All the land in this area is privately owned by seven individuals.

FORESTRY

Section V I has a total land area of 31 acres, of which 22 acres are contoured. This mine site is naturally regenerating forest land as no planting has taken place.

The spoil piles in this section have an average slope of 16° and an average height of 15 feet.

PONDS

One pond was surveyed in Section V I, however it was not a priority pond. It had a pH of 7.0 and a depth of 6 feet. Access to this pond is good by road and on foot.

SOILS

One soil sample was collected from Section V I. Analysis showed a pH of 4.6, very low levels of phosphorus, low levels of potassium and medium levels of calcium and magnesium. The soil texture is sandy; the dominant parent material is sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this section. The vegetation density ranged from 25-30% to 80-85% with the average being 55%. Twenty vascular plant species were identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transects in this area.

SECTION V J : MARSHAL ROAD MINE

GENERAL DESCRIPTION

The Marshal Road Mine is 556 acres in size and partly borders Coal Creek. The northeastern portion was mined in the 1970's. It is presently being mined by Knox Contracting Ltd. for N. B. Coal Limited. The remainder of this area was mined some time between 1938 and 1959 by the Avon Coal Company.

The Marshal Road follows the southern border of this section, while the Avon Road runs along the border to the east. Both roads are in good condition. Several fair to good roads enter the section from the Avon Road.

There are some homes situated on the Marshal Road about one-half mile from this section. There are also dwellings very near this mine site on the Avon Road. Section V J is approximately four miles outside of the Chipman village limits.

N. B. Coal Limited and nine other individuals own approximately 540 acres of this section. The remainder is Crown land.

FORESTRY

Section V J has a total land area of 556 acres, none of which is contoured. Five hundred and forty four (544) acres are forested, and 12 acres have no tree life. Of the forested land, 79 acres are planted with Scotch Pine and Black Locust and 465 acres are regenerating naturally. Four hundred and two (402) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 29° and an average height of 25 feet.

PONDS

Two ponds in Section V J were designated as priority ponds, however, these could not be located due to active mining in the vicinity. One pond (#824) that was not a priority pond was surveyed. It had a pH of 5.5, a depth of 6 feet, and shore slopes of 25°. Access to this pond is good by road, but access to the shore is poor, and only possible on foot. Some dumping was noted in the area of this pond.

STREAMS

Two streams were sampled in Section V J. Both had a pH of 6.0 while their flows were 0.20 ft^3/sec and 0.98 ft^3/sec. These streams were sampled in late July, 1984.

SOILS

Three soil samples were collected from Section V J. Analysis revealed a pH range of 3.7 to 4.8, very low levels of phosphorus, very low to low levels of potassium, medium levels of calcium and medium to high levels of magnesium. The soil texture is sandy and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

Two transects were completed in this area. The vegetation density ranged from 5-10% to 10-15% with the average being 10%. Fourteen species were identified.

Non-Vascular Plants (Lichens)

Five lichen species were identified from the transect in this section. *Cladonia cristatella* was the most abundant.

SECTION V K: RANGE MINE

GENERAL DESCRIPTION

The Range Mine is 166 acres in size and was mined sometime between 1938 and 1959 by the Avon Coal Company. During the 1970's further mining by N. B. Coal Limited occurred in this section. This area, located near Pennlyn, is about four miles south of the Chipman village limits. The nearest permanent dwellings are in Pennyln less than one mile away. Access to this section is provided by the Marshal Road. This dirt road is in good condition and forms the northern boundary of the section. This mine site is owned by N. B. Coal Limited and two individuals.

FORESTRY

Section V K has a total land area of 165 acres, none of which is contoured. Seventy five (75) acres are forested; 90 acres have no tree life. Of the forested land, 29 acres are planted with Scotch Pine and Black Locust, and 46 acres are regenerating naturally. One hundred and twenty five (125) acres are designated as "non-contoured, not planted and openly stocked".

The spoil piles in this section have an average slope of 30° and an average height of 25 feet.

PONDS

Two ponds (#832 and #838) in Section V K were designated as priority ponds. Their pH's were 5.5 and 6.0, and their depths were 12 and 16 feet. The average slope of the pond banks was 28°. Access to these ponds by road is good, but to the shoreline of pond #838 is poor. Signs of beaver activity were noted at pond #832.

SOILS

One soil sample was taken from Section V K. Analysis showed a pH of 4.8, very low levels of phosphorus, low levels of potassium, medium levels of calcium and very high levels of magnesium. The soil texture is sandy and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with nine species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

SECTION V L: RANGE MINE

GENERAL DESCRIPTION

The Range Mine is 768 acres in size and is situated five miles south of the Chipman village limits. The western side of this section was mined sometime between 1938 and 1959 by the Avon Coal Company. The largest portion of the section, however, was mined in the 1970's by N. B. Coal Ltd. This section can be reached by only one road, which is located where the Marshal Road begins. It should be noted that this road, located near an old coal stockpile area and an abandoned loading ramp, is in poor condition due to flooding and obstructions. Two roads extend from Highway 10 toward the section but one is chained and the other is blocked off near the mine. Another road goes through Section V K, toward Section V L, but is also blocked off. Inside the section, however, the roads are good.

Five hundred and seventy (570) acres of this section are privately owned by six individuals; the remainder is Crown land. The nearest permanent dwellings are less than one mile away along Highway 10.

FORESTRY

Section V L has a total land area of 760 acres, of which 408 acres are contoured. Two hundred and sixty one (261) acres are forested and 499 acres have no tree life. Of the forested land, 45 acres are planted with Scotch Pine and Black Locust and 216 acres are regenerating naturally. Two hundred and fifty one (251) acres are designated as "non-contoured, not planted, and openly stocked".

The spoil piles in this section have an average slope of 17° and an average height of 25 feet.

PONDS

One pond in Section V L was designated as a priority pond. This pond was not surveyed, however, because it is too shallow.

STREAMS

One stream was sampled in Section V L. It had a pH of 6.5 and a flow of 1.81 ft^3/sec. This stream was sampled in late July, 1984.

SOILS

Two soil samples were collected from Section V L. Analysis revealed a pH range between 4.1 and 4.5, very low levels of phosphorus, low levels of potassium, medium levels of calcium, and high to very high levels of magnesium. The soil texture is sandy and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this section. The vegetation density was 0-5% with fifteen species being identified.

Non-Vascular Plants (Lichens)

No lichens were found on the transect in this section.

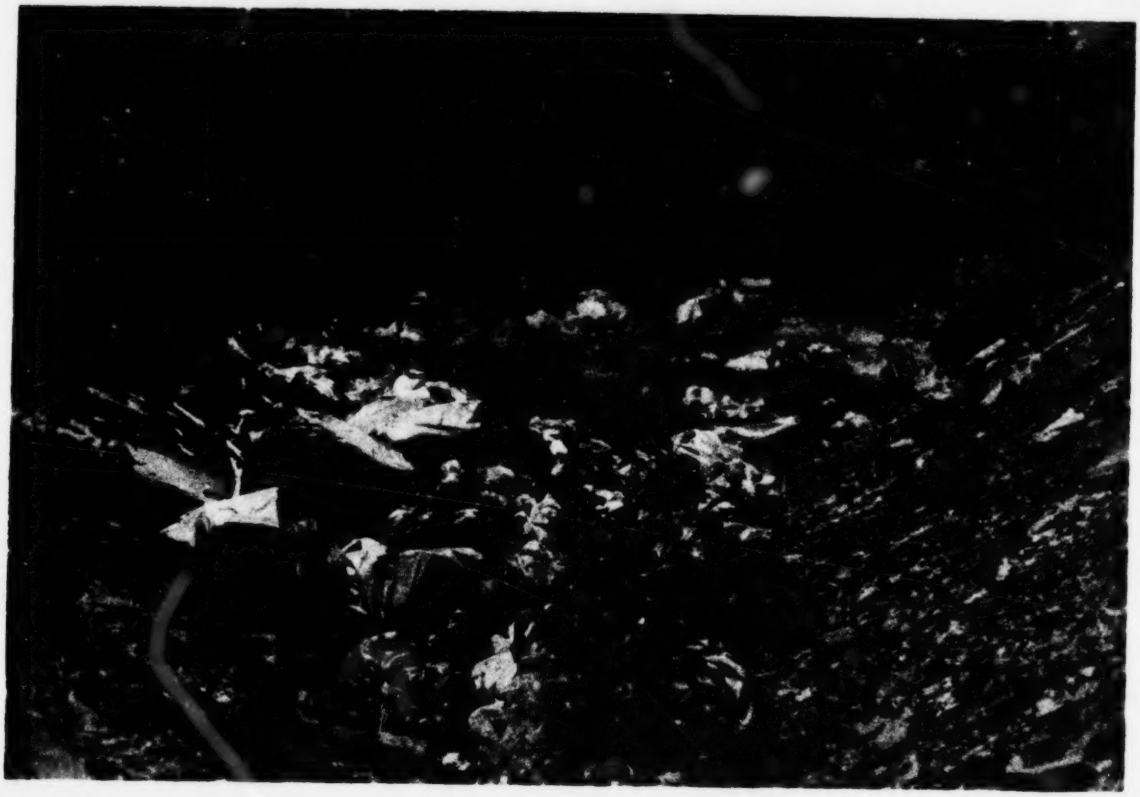


Figure 19 - Garbage is common at both contoured and non-contoured mine sites. In Section V L, several bags of urea formaldehyde foam insulation were discovered.

SECTION V M: SALMON RIVER ROAD MINE

GENERAL DESCRIPTION

The Salmon River Road Mine is 68 acres in size and is located near the community of Coal Creek about three miles south of the Chipman village limits. The nearest permanent dwellings are those of Coal Creek less than one half mile away.

The Salmon River Mouth Road skirts the western edge of this section and provides limited access to the area. A dirt road that leads from the center of the mined area to the Salmon River Mouth Road is not passable.

Section V M is owned privately by four individuals.

FORESTRY

Section V M has a total land area of 68 acres, of which 20 acres are contoured. Forty eight (48) acres are forested and 20 acres have no tree life. This forested land is regenerating naturally as no planting has taken place.

The spoil piles in this section have an average slope of 22° and an average height of 20 feet.

SOILS

One soil sample was taken from Section V M. Analysis showed a pH of 4.6, very low levels of phosphorus, low levels of potassium, medium levels of calcium and high levels of magnesium. The soil texture is sandy and the dominant parent material is sandstone.

VEGETATION

Vascular Plants

One transect was completed in this area. The vegetation density was 10-15% with nine species being identified.

Non-Vascular Plants (Lichens)

Four lichen species were identified from the transect in this section. Palmia salcota was the most abundant.

BIBLIOGRAPHY

Britton, N. L. and A. Brown. 1970. An Illustrated Flora of the Northern United States and Canada. Dover Publications, Inc., New York

Fernald, M. L. (Ed). 1970. Gray's Manual of Botany. Van Nostrand Company. New York, N. Y.

Hale, M. E. 1979. How To Know The Lichens. Wm. C. Brown Company Publishers. Dubuque, Iowa

Ireland, R. R. 1982. Moss Flora of the Maritime Provinces. National Museum of Natural Sciences Publications in Botany, No. 13. Ottawa, Ont.

Meadows, B. B., Wm. C. Hooper, G. M. Smith, M. Shanks, C. B. Rayworth, and M. J. Nightengale. Minto - Chipman Strip Mining Reclamation Experiment 1967 - 1973.

Montreal Engineering Company Limited. 1978. Environmental Assessment Salmon Harbour - Midland Mine, Phase II.

Peterson, R. T. and M. McKenny. 1968. A Field Guide to Wildflowers of Northeastern and Northcentral North America. Houghton Mifflin Company. Boston, Mass.

Petrides, G. A. 1972. A Field Guide to Trees and Shrubs. Houghton Mifflin Company. Boston, Mass.

Robins, C. R. and R. W. Crawford. 1954. A Short, Accurate Method for Estimating the Volume of Stream Flow. Journal of Wildlife Management, 18 : 366 - 369.

Roland, A. E. and E. C. Smith. 1969. The Flora of Nova Scotia. The Nova Scotia Museum. Halifax, N. S.

Smith, R. L. 1980. Ecology and Field Biology. Harper and Row Publishers. New York, N. Y.

Higgins, Douglas H. 1979. History of Coal Mining and Other Related Industries In The Minto and Chipman Areas 1783-1978.

Swartzman, E., J. H. H. Nicolls, E. J. Borrough and R. E. Gilmore. 1944. Physical and Chemical Survey of Coals from Canadian Collieries (Number 4) New Brunswick - Minto Coalfield, Memorandum Series No. 89, December 1944. Canada Dept. of Mines and Resources, Mines and Geology Branch, Bureau of Mines.

ACKNOWLEDGEMENTS

We wish to especially thank two members of the Reclamation Committee, Cathy MacLaggan and George Greer, for overseeing the project and providing help and support when needed.

Thanks are due to the summer students who assisted in completing the field work: John Barton, Rita Bilerman, Niel Cairnie, Lyndon Flower, Paul Lemmon and Kathy Stilwell.

Special thanks are also sent out to Ron Phillips for help in securing equipment and for outstanding work in the mapping department. Administrative duties and the provision of equipment and a building by N. B. Coal Ltd. and Grand Lake Resources Ltd. was greatly appreciated.

Thanks are in order for the essential equipment provided be the following persons or departments including: Bill Hooper (Fish and Wildlife Branch, DNR), Minto and Chipman DNR Caches, Don Logan (Forester, DNR Hampton), Forest Management Branch (DNR), Grand Lake Generating Station (NBEPC), Tom Pettigrew (Wildlife Biologist, DNR Hampton), and Doug Mason (Crown Land Planner, DNR).

We also wish to express our gratitude to those individuals who supplied valuable information which improved the quality of this project. These people are Jane Tims and Hal Hinds for help in identifying vegetation, and Ross Bishop and Dawson Pickard for historical information on mining in the region.

The analysis of the soil samples by the Department of Agriculture is also greatly appreciated.

Table A-1 (a)
Forest Inventory for Strip Mined Areas Near Minto and Chipman

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section I A				
VE-633	324	No	40	Reforested	M	15	11	JP	JP_7; IH_2; (GB,TA); BL_1
VE-484	315	No	40	Natural	NTL	-	-	-	-
VE-637	6	No	35	Natural	0	2	3	TA	IH_{10}
VE-485	11	No	25	Reforested	D	-	-	-	-
VE-438	41	No	30	Reforested	M	15	10	JP	JP_8; IH_2
					Section I B				
S4-376	84	Yes	10	Natural	NTL	-	-	-	-
S4-93	26	Yes	10	Natural	NTL	-	-	-	-
					Section I C				
S4-417	17	Yes	10	Natural	NTL	-	-	-	-
T3-447	75	Yes	15	Reforested	0	3	4	JP	JP_9; $(GB,WB)_1$
T3-477	126	Yes	10	Natural	NTL	-	-	-	-
T1-4	15	Yes	10	Natural	NTL	-	-	-	-
					Section I D				
T1-9a	15	No	15	Natural	0	-	-	IH	-
T1-9b	16	Yes	10	Natural	NTL	-	-	-	-
S2-137	49	Yes	10	Natural	NTL	-	-	-	-
S2-362	17	Yes	10	Reforested	0	3	3	JP	JP_4; TA_3; GB_3
S2-153	3	Yes	10	Natural	NTL	-	-	-	-

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section I E									
T1-83	92	No	30	Reforested	D	8	15	RP	RP_8; IH_2
T1-86	4	Yes	10	Natural	NTL	-	-	-	-
T1-87	7	No	30	Natural	D	-	-	IH	IH_9
T1-114	3	Yes	10	Reforested	O	-	-	Pine	SW_9; IH_1
T1-364	38	No	30	Reforested	M	8	15	RP	RP_8
T1-58	16	No	30	Natural	D	-	-	IH	IH_9
	Stand T1-58 is only partly on mined land (16 acres).								
T1-115	14	No	30	Natural	D	-	-	IH	IH_9
	Stand T1-115 is only partly on mined land (14 acres).								
T1-217	6	No	30	Natural	D	8	15	TA	TA_4; WB_4; GB_1; AW_1
T1-366	7	No	30	Reforested	D	-	-	IH	IH_8; SW_2
T1-363	8	No	30	Reforested	O	-	-	-	-
T1-59	74	No	30	Natural	O	-	-	IH	-
T1-63	40	No	30	Natural	D	-	-	IH	IH_9
T1-62	43	No	30	Reforested	D	40	30	LT	LT_6; RM_1; GB_2; JP_1
T1-219	74	No	30	Reforested	O	10	11	BL	BL_5; NS_1
T1-77	34	No	30	Natural	D	-	-	IH	IH_{10}
T1-95	17	No	30	Natural	O	-	-	IH	IH_{10}
T1-96	20	No	30	Natural	D	-	-	IH	IH_8; SW_2
T1-88	18	No	30	Natural	M	-	-	IH	IH_8
T1-367	5	No	30	Reforested	M	10	11	BL	BL_5; NS_1
T1-368	9	No	30	Reforested	M	10	11	BL	BL_5; NS_1
T1-209	129	No	30	Reforested	M	9	11	JP	JP_8; NS_1; IH_1
T1-365	34	No	30	Reforested	M	9	11	JP	JP_8; NS_1
T1-175	21	No	35	Natural	O	10	7	WB	WB_5; TA_2; GB_2; JP_1
T1-18	23	No	30	Reforested	O	-	-	Pine	-
T1-15a	8	No	30	Reforested	O	-	-	JP	-
T1-43	41	No	30	Reforested	O/P	10	6	JP	JP_6; GB_1
T1-362	21	No	30	Reforested	D	-	-	IH	IH_9
T1-42	40	No	30	Natural	O	-	-	IH	IH_{10}

Stand #	Stand Area (Acres)	Contoured	Slope $(^{c})$	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section I E (continued)				
T1-15b	189	No	30	Natural	O	4	4	TA	TA_7; GB_2
T1-226	78	No	30	Reforested	O	10	12	JP	JP_8; TA_1; GB_1
T1-60	13	No	30	Reforested	M	10	10	JP	JP_7; TA_2; GB_1
T1-225	50	No	25	Reforested	M	3	9	RP	RP_8; $(GB/WB)_1$; TA_1
T1-211	7	No	20	Natural	O	10	8	Alder	AW_4; TA_2; WB_2; GB_1; TL_1
T1-212	5	No	30	Natural	O	-	-	IH	IH_{10}
T1-176	78	No	30	Reforested	M	5	13	BL	BL_3; GB_2; TA_2; WB_2; TL_1
T2-139	20	No	30	Reforested	D	-	15	RP,Spruce	-
T2-145	11	No	30	Natural	M	-	-	IH	IH_9
T2-147	10	No	5	Natural	O	-		IH	IH_9
T2-143	51	No	30	Natural	O	-	-	IH	IH_9
T2-172	13	No	30	Natural	D	-	-	IH	IH_7; SW_3
T2-173	16	No	30	Natural	D	-	-	IH	IH_{10}
T2-169	16	No	10	Natural	O	12	10	WB	WB_4; PC_1; AW_1; GB_2; (WP,WS,BF)
T2-189	1	No	10	Natural	O	-	-	IH	IH_9
T2-249	14	No	30	Natural	O	-	-	IH	IH_9
T1-192	9	No	30	Reforested	M	-	-	IH	IH_9; SW_1
T1-196	13	No	30	Natural	D	-	-	IH	IH_8
Stand T1-196 is only partially on mined land (13 acres).									
T1-213	18	No	30	Reforested	M	9	11	JP	JP_8; NS_1
T1-218	38	No	30	Reforested	M	9	11	JP	JP_8; NS_1
T1-215	13	No	30	Reforested	M	9	11	JP	JP_8; NS_1
T1-90	7	No	25	Natural	D	-	-	IH	IH_{10}
Stand T1-90 is only partially on mined land (7 acres).									
T2-137	13	Yes	15	Reforested	D	-	15	RP	RP_{10}
T2-138	8	Yes	10	Reforested	D	-	15	RP,Spruce	-
T2-245	2	No	10	Natural	D	-	-	IH	IH_{10}
T2-184	23	No	30	Natural	M	-	-	IH	IH_9
T2-188	29	No	30	Reforested	M	-	-	IH	IH, JP, NS

Stand #	Stand Area (Acres)	Contoured	Slope (%)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section I E (continued)									
T2-185	10	No	30	Natural	D	-	-	IH	IH_{10}
T2-167	31	No	30	Reforested	M	-	-	JP, IH	IH_4; JP_4
T2-165	20	No	30	Reforested	O	9	11	JP	JP_8; NS_1
T2-163	7	No	10	Natural	M	20	12	GB	GB_4; AC_2; TL_1; RM_1; TA_1; $(WS,BS)_1$
T2-194	8	No	30	Reforested	O	9	11	JP	JP_8; NS_1; IH_1
T2-142	24	No	30	Natural	M	-	-	IH	IH_9
Section I F									
T2-130	20	No	10	Natural	O	-	-	Hardwoods	HW_8; RP_1; $(AW,GB,TA,PC)_1$
Section II A									
W4-395a	136	Yes	15	Natural	NTL	-	-	-	-
W4-403	14	Yes	15	Natural	NTL	-	-	-	-
Section II B									
W2-59	18	4 acres	25	Natural	NTL	-	-	-	-
W2-63	4	2 acres	15	Natural	NTL	-	-	-	-
W2-64	5	1 acre	25	Natural	NTL	-	-	-	-
W2-65	3	No	30	Natural	NTL	-	-	-	-
W2-66	8	No	30	Natural	NTL	-	-	-	-
W2-61	17	Yes	5	Natural	NTL	-	-	-	-
W2-62	5	4 acres	10	Natural	NTL	-	-	-	-
W2-51	8	No	30	Natural	NTL	-	-	-	-
W2-49	16	4 acres	25	Natural	NTL	-	-	-	-
W2-52	5	No	30	Natural	NTL	-	-	-	-
W2-47	3	No	30	Natural	NTL	-	-	-	-

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section II B (continued)									
W2-48	8	No	30	Natural	NTL	-	-	-	-
W2-277	1	No	30	Natural	NTL	-	-	-	-
W2-246	3	No	30	Natural	NTL	-	-	-	-
W2-248	3	No	30	Natural	NTL	-	-	-	-
W2-276	15	No	30	Natural	0		-	IH	IH_9
W2-273	2	No	30	Natural	NTL	-	-	-	-
W2-67	4	1 acre	20	Natural	NTL	-	-	-	-
W2-247	21	No	30	Natural	0		-	IH	-
Stands 47, 48, 49, 52, 59, 60, 62, 66, 67, 246, 248, 276 and 277 are only partially on mined land.									
Stands 49, 59, 62, 63, 64 and 67 are partially contoured.									
Section II C									
W1-141	26	No	30	Natural	M	-	-	IH	IH_9
Section II D									
W1-180a	16	No	30	Reforested	0	-	-	SW	-
W1-180b	15	No	30	Natural	0/P	-	-	IH	IH_8
W1-180c	85	No	30	Natural	NTL	4	3	TA	TA_5; GB_3; WB_1; PC_1
W1-331a	69	No	30	Natural	0	-	-	IH	IH_9
W1-348	61	No	30	Reforested	M	10	12	BL	BL_8; IH_2
W1-353	17	No	30	Reforested	D	10	12	BL	BL_8
W1-331b	107	9 acres	30	Natural	0	-	-	IH	IH_9
In Stand W1-331b, 26 acres have been reforested(planted).									
W1-331c	90	31 acres	10	Natural	NTL	-	-	-	-
W1-331d	9	No	5	Natural	0	-	-	IH	IH_9
W1-331e	19	No	5	Natural	0	-	-	IH	IH_9
W1-331f	16	No	5	Natural	NTL	-	-	-	-
W1-364	5	No	5	Natural	0	-	-	IH	IH_{10}

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section II D (continued)									
W1-362	9	No	30	Reforested	M	10	12	BL	BL_8
W1-439	4	No	30	Reforested	D	10	12	BL	BL_8
Section II E									
W1-331g	3	No	5	Natural	NTL	-	-	-	-
Section II F									
W1-331h	7	No	15	Natural	NTL	-	-	-	-
Section II G									
W1-331i	10	No	10	Natural	NTL	-	-	-	-
Section II H									
W4-395b	36	Yes	10	Natural	NTL	-	-	-	-
Section II I									
W2-352a	9	Yes	5	Natural	0	-	-	IH	-
W2-352b	65	Yes	5	Reforested	0	3	2	JP	JP_8; TA_1; GB_1
Section II J									
W2-352c	8	Yes	10	Natural	NTL	-	-	-	-

Stand #	Stand Area (Acres)	Contoured	Slope (^{c})	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section II K				
T3-147	35	No	30	Reforested	D	13	10	SP	SP_8; BL_1; IH_1
T3-146	20	No	30	Reforested	D	13	10	SP	SP_8; BL_1; IH_1
T3-149a	50	No	30	Natural	M/P	-	-	IH	IH_{10}
T3-149b	4	No	30	Reforested	0	-	-	SW	SW_{10}
T3-153	71	No	30	Reforested	0	5	10	BL	BL_2; IH_2
T3-184a	25	No	30	Reforested	0	5	10	SP	SP_2; IH_2
T3-186	42	No	30	Reforested	0/P	5	10	SP	SP_7; IH_3
T3-474	20	Yes	10	Reforested	0	5	10	SP	SP_7; IH_3
T3-480a	14	No	10	Natural	NTL	-	-	-	-
T3-145	7	No	30	Natural	0	4	4	GB	IH_{10}
T3-188	9	No	30	Reforested	0/P	5	10	SP	SP_7; IH_3
T3-139	11	No	30	Natural	M	-	-	IH	IH_{10}
W1-355	2	No	30	Natural	0	-	-	IH	IH_9
W1-358	1	No	30	Natural	0	-	-	IH	IH_9
W1-480b	7	Yes	5	Reforested	0	5	10	SP	SP_7; IH_3
					Section II L				
W1-184b	6	No	30	Reforested	0	5	10	SP	SP_7; IH_3
					Section II M				
T3-179	12	No	25	Natural	0	10	10	GB	GB_3; TA_2; WB_2; $(AC,JP,WS)_3$
					Section II N				
T3-214	34	No	30	Natural	0	-	-	IH	IH_{10}
T3-478	10	No	30	Reforested	0	-	-	Pine	-
T3-460	19	No	30	Reforested	0	-	-	Pine	-
T3-479	8	No	30	Reforested	0	-	-	Pine	-

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section II 0				
T2-36	31	No	30	Reforested	M	-	-	IH	IH_8; JP_2
T2-247	36	No	30	Reforested	0	12	14	JP	JP_8; IH_2
T2-39	177	No	30	Reforested	0	12	15	JP	JP_6; SP_4
T2-51	14	No	30	Natural	D	-	-	IH	IH_9
T2-41	58	No	30	Reforested	0	12	15	JP	JP_6; SP_4
T2-40	0.2	No	20	Natural	NTL	-	-	-	-
T2-248	58	No	30	Reforested	M	12	10	SP	SP_8; JP_1; BL_1
T2-48	11	6 acres	10	Natural	0	-	-	IH	-
T2-73	77	Yes	5	Natural	0	-	-	IH	IH_{10}
T2-67	35	No	30	Natural	0	15	8	GB	GB_4; TA_3; $(WB,LT)_1$; WB_2
T3-273	21	No	30	Reforested	M	-	-	JP	JP_{10}
T3-291	14	Yes	10	Natural	NTL	-	-	-	-
T3-271	5	No	30	Reforested	M	-	-	JP	JP_{10}
T3-267	9	No	30	Natural	M	-	-	IH	IH_{10}
T3-290	8	No	30	Natural	M	-	-	IH	IH_{10}
T3-289	5	No	30	Natural	D	-	-	IH	IH_9; SW_1
	Stand T3-289 is only partially on mined land.								
T3-254	6	No	30	Reforested	D	-	-	RP	RP_4; JP_3; IH_3
T3-255	10	No	30	Reforested	D	-	-	RP	RP_5; JP_3; IH_2
T3-257	8	No	30	Reforested	D	-	-	RP	RP_5; JP_3; IH_2
T3-258	23	No	30	Reforested	D	-	-	RP	RP_5; JP_3; IH_2
T3-475	6	No	30	Reforested	D	-	-	RP	RP_5; JP_3; IH_2
T3-476	13	No	30	Reforested	M	-	-	RP	RP_5; JP_3; IH_2
T3-265	1	No	30	Natural	0	-	-	IH	IH_9
T3-266	6	5 acres	5	Natural	0	-	-	IH	IH_9
T4-23	34	26 acres	5	Natural	0	-	-	IH	IH_9
T4-22	10	Yes	5	Natural	M	-	-	IH	IH_9
T4-291	7	No	30	Natural	M	-	-	IH	IH_9
T4-383	4	No	30	Reforested	M	6	11	JP	JP_8; RP_1; NS_1

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section II 0 (continued)				
T4-382	20	No	30	Reforested	0	7	9	RP	RP_8; SP_2
T4-381	32	No	30	Reforested	M	6	11	JP	JP_8; RP_1; NS_1
T4-275	58	No	30	Reforested	M	3	13	NS	NS_7; IH_3
T4-379	49	No	30	Reforested	M	10	11	JP	JP_8; IH_2
T4-380	39	No	30	Reforested	M	6	11	JP	JP_8; RP_1; NS_1
T4-277	139	No	30	Reforested	M	7	11	JP	JP_9; BL_1
T4-384	7	No	30	Reforested	M	7	11	JP	JP_9; BL_1
T4-286	19	Yes	5	Natural	0	-	-	IH	IH_9
T4-279	8	No	10	Natural	0	-	-	IH	IH_9
T4-276	10	Yes	5	Natural	0	-	-	IH	IH_9
T4-287	26	No	30	Natural	0	-	-	IH	IH_9
T4-281	105	No	5	Natural	NTL	-	-	-	-
T4-310	3	No	30	Reforested	0	12	10	SP	SP_8; JP_1; BL_1
T4-358	22	No	30	Reforested	M	12	14	JP	JP_8; IH_2
T4-387	37	No	30	Reforested	0	7	11	JP	JP_9; IH_1
T4-378	15	No	30	Reforested	M	10	13	JP/BL	JP_5; BL_5
T4-350	15	No	30	Natural	M	-	-	IH	IH_{10}
	Stand T4-350 is only partially on mined land.								
T4-352	17	No	30	Natural	0	-	-	IH	IH_9
T4-354	0.8	No	30	Natural	M	-	-	IH	IH_{10}
T4-353	0.6	No	10	Natural	0	-	-	IH	IH_{10}
T4-283	9	No	5	Reforested	0	6	11	JP	JP_8; RP_1; NS_1
T4-24	10	No	5	Reforested	M/P	20	16	SP	SP_{10}
T4-315	7	No	30	Reforested	0	12	15	JP	JP_6; SP_4
T4-316	14	No	10	Natural	0	-	-	IH	-
T4-317	3	Yes	5	Reforested	M	12	15	JP	JP_6; SP_4
T4-377	8	No	30	Reforested	0	12	15	JP	JP_6; SP_4
T4-388	9	No	10	Reforested	0	12	15	JP	JP_6; SP_4
T4-67	27	No	30	Reforested	0	12	14	JP	JP_8; IH_2
T4-356	366	No	30	Reforested	0	12	14	JP	JP_8; IH_2

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section II O (continued)									
T4-318	32	No	30	Reforested	0	12	14	JP	JP_8; IH_2
T4-359	13	No	30	Reforested	M	12	14	JP	JP_8; IH_2
Section II P									
W2-372	24	7 acres	20	Natural	O/P	-	-	IH	IH_9
W2-374	4	Yes	5	Natural	0	-	-	IH	-
T4-44	16	Yes	5	Natural	0	3	3	GB	GB_6; TA_4
W2-370	4	3 acres	5	Natural	0	-	-	IH	-
W2-371	4	No	30	Natural	M	-	-	IH	IH_9
Section II Q									
T4-86	30	No	25	Reforested	0	-	-	SW	SW_8; IH_2
T4-85	1	Yes	5	Natural	0	-	-	IH	-
W2-401	13	Yes	5	Natural	0	-	-	IH	-
Section II R									
T4-168	10	No	30	Natural	O/P	15	10	GB	GB_6; TA_3; $(PC,SW)_1$
T4-154	27	No	30	Natural	O/P	15	10	GB	GB_6; TA_3; $(PC,SW)_1$
Section II S									
T4-211	14	No	30	Natural	M/P	10	8	TA	TA_4; WB_3; GB_2; RM_1
Section II T									
R3-13	6	No	10	Natural	O/P	-	-	IH	-

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section II T (continued)				
R3-232	3	No	15	Natural	M	-	-	IH	-
R3-231	2	No	20	Natural	M	-	-	IH	-
R3-14	9	No	25	Reforested	M	-	-	SW	-
R3-15	5	No	25	Reforested	M	-	-	SW	-
R3-237	0.4	No	25	Reforested	O/P	-	-	SW	-
R3-238	0.4	No	5	Reforested	M	-	-	SW	-
R3-236	1	No	25	Reforested	M	-	-	SW	-
R3-20	7	No	25	Natural	O/P	-	-	IH	IH_9
R3-28	5	No	25	Natural	O	-	-	IH	IH_9
R3-18	3	Yes	5	Natural	O	-	-	IH	-
R3-19	2	Yes	5	Natural	O	-	-	IH	-
R3-230	2	No	25	Natural	O	-	-	IH	-
T4-187	40	No	30	Natural	O/P	10	8	TA	TA_5; GB_2; WB_1; $(AW,RM)_2$
T4-385	11	No	30	Reforested	M	4	11	RP	RP_8; BL_1; IH_1
T4-195	46	No	30	Reforested	M	9	11	JP	JP_5; BL_4; NS_1
T4-204	44	No	30	Reforested	M	7	11	JP	JP_5; BL_4; IH_1
T4-203	12	No	30	Natural	D	-	-	IH	IH_9
T4-199	28	No	30	Natural	M	-	-	IH	IH_9
T4-183	72	No	30	Reforested	M	9	11	JP	JP_5; BL_4; NS_1
T4-185	8	No	30	Reforested	M	9	11	JP	JP_5; BL_4; NS_1
T4-386	6	No	30	Reforested	M	4	11	RP	RP_8; BL_1; IH_1
W2-434	62	No	30	Reforested	M/P	9	11	JP	JP_5; BL_4; WS_1
W2-520	5	No	10	Natural	O	-	-	SW	-
W2-457	5	No	30	Reforested	M	9	11	JP	JP_5; BL_4; WS_1
W2-458	18	No	30	Natural	O	15	8	TA	TA_5; GB_2; WB_1; AW_1; $(BC,RM)_1$
W2-522	4	No	30	Reforested	M	9	11	JP	JP_5; BL_4; NS_1
W2-431	4	No	30	Reforested	D	9	11	JP	JP_5; BL_4; WS_1
W2-521	2	No	10	Natural	O	-	-	SW	-
W2-519	6	No	30	Natural	O	-	-	SW	-

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section III A				
U3-144	19	No	5	Natural	0	10	8	GB	GB_6; TA_2; BL_1; $(TL,WB,JP)_1$
U3-249	16	No	30	Natural	M/P	-	-	IH	-
U3-212	13	No	30	Natural	0	-	-	IH	-
U3-217	7	No	30	Natural	0	8	5	TA	TA_4; GB_3; WB_2; PC_1
U3-219	10	No	30	Natural	M	-	-	IH	IH_9
U3-220	19	No	30	Natural	D	-	-	IH	IH_9
U3-161	24	No	30	Natural	0	-	-	IH	-
U3-207	42	No	30	Natural	D	-	-	IH	IH_6
U4-7	14	No	30	Natural	0	-	-	IH	-
					Section III B				
U3-264	31	No	30	Reforested	0/P	-	-	SW	-
					Section III C				
U3-303a	43	No	30	Natural	0	6	7	GB	GB_5; TA_3; WB_2
					Section III D				
U3-369	14	No	30	Reforested	0/P	-	-	SW	-
U3-341	5	No	35	Natural	0	-	-	IH	IH_8
U3-303b	136	No	30	Reforested	0/P	-	-	SW	-
U3-300	8	No	5	Natural	0	-	-	IH	-
U3-334	6	No	30	Natural	D	-	-	IH	IH_8
					Section III E				
U3-375	53	No	30	Natural	0	10	8	GB	GB_8; TL_1; $(SP,WB,TA)_1$

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section III E (continued)				
U3-339	2	No	30	Natural	0	4	3	GB	GB_8; TL_2
					Section III F				
U3-503	13	No	30	Natural	M	-	-	IH	-
U3-329	14	No	30	Natural	M	-	-	IH	-
U3-331	6	No	30	Natural	D	-	-	IH	IH_8
					Section III G				
U3-325	9	No	30	Natural	M	-	-	IH	-
U3-398	20	No	30	Natural	M	15	10	TA	TA_5; GB_3; WB_1; PC_1
					Section III H				
U3-319	8	No	30	Natural	0	-	-	IH	IH_8
U3-316	16	No	30	Reforested	0	-	-	SW	-
					Section III I				
U3-275	38	No	30	Reforested	0	-	-	SW	-
U3-271	41	No	30	Natural	0/P	-	-	IH	iH_9
U3-446	10	No	30	Natural	0	6	4	TA	TA_6; GB_4
U3-314	6	No	30	Reforested	0	-	-	SW	-
					Section III J				
U1-90	23	No	30	Reforested	M	8	13	RP	RP_9; IH_1
U1-77b	66	17 acres	30	Natural	NTL	-	-	-	-

Section III J (continued)

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
UI-37	10	No	30	Natural	NTL	-	-	-	-
	Stand UI-37 is only partially on mined land.								
UI-355	10	No	level	Natural	NTL	-	-	-	-
UI-287	11	No	25	Natural	O/P	10	10	TA	TA_6; GB_2; PC_1; WB_1
UI-319	20	No	30	Natural	O	-	-	IH	IH_{10}
UI-308	37	No	30	Natural	O	15	15	TA	TA_4; GB_2; AC_2; PC_1; WB_1
UI-292	20	No	25	Natural	O/P	10	10	TA	TA_6; GB_2; PC_1; WB_1
UI-84	8	No	30	Natural	O	-	-	IH	IH_{10}
UI-365	6	No	30	Reforested	M	8	13	RP	RP_9; IH_1
UI-91	26	No	30	Reforested	M	8	13	RP	RP_9; IH_1
UI-362	67	No	30	Reforested	O/P	8	13	RP	RP_9; IH_1
UI-364	24	No	30	Reforested	M	8	13	RP	RP_9; IH_1
UI-112	20	No	30	Natural	D	-	-	IH	IH_{10}
UI-111	17	No	30	Reforested	O	8	13	RP	RP_9; IH_1
UI-360	48	No	30	Reforested	M	3	12	BL	BL_9; IH_1
UI-285	142	No	30	Natural	O/P	5	3	GB	GB_6; TA_3; PC_1
UI-85	144	No	30	Natural	O/P	12	10	TA	TA_3; WB_2; RM_2; GB_2; PC_1
UI-301	35	No	10	Natural	NTL	-	-	-	-
UI-132	58	No	30	Natural	M/P	-	-	IH	IH_9
UI-127	31	No	30	Natural	M/P	-	-	IH	IH_9
UI-80	47	No	30	Natural	O/P	5	3	GB	GB_6; TA_3; PC_1
UI-88	28	No	30	Natural	M/P	-	-	IH	IH_9
UI-77a	22	No	30	Natural	O/P	-	-	IH	IH_{10}
UI-94	12	No	30	Natural	O	-	-	IH	IH_9
UI-103	2	No	30	Natural	M	-	-	IH	IH_9
UI-176	4	No	30	Natural	NTL	-	-	-	-
UI-177	0.6	No	30	Natural	M	-	-	IH	IH_9
UI-92	255	152 acres	5	Natural	NTL	-	-	-	-
UI-93	2	Yes	5	Natural	NTL	-	-	-	-
	Stand UI-93 was previously a pond but has been mined over.								

Section III J (continued)

Stand #	Stand Area (Acres)	Contoured	Slope (c)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
U1-73	19	Yes	5	Natural	NTL	-	-	-	-
U1-74	10	No	5	Natural	NTL	-	-	-	-
U1-72	30	15 acres	5	Natural	NTL	-	-	-	-
U1-71	12	Yes	5	Natural	NTL	-	-	-	-
U1-69*	2	No	5	Natural	NTL	-	-	-	-
U1-67*	7	No	35	Natural	NTL	-	-	-	-
U1-66*	6	No	35	Natural	NTL	-	-	-	-
U1-70*	34	No	5	Natural	NTL	-	-	-	-
U1-52*	8	6 acres	5	Natural	NTL	-	-	-	-
U1-51*	10	4 acres	5	Natural	NTL	-	-	-	-
U1-50*	18	7 acres	35	Natural	NTL	-	-	-	-
U1-49*	23	3 acres	35	Natural	NTL	-	-	-	-
U1-64*	27	No	5	Natural	NTL	-	-	-	-

* Stands U1-69, 67, 66, 70, 52, 51, 50, 49 and 64 are partially mined; only mined acreages are recorded.

U1-130	23	No	30	Natural	M/P	-	-	IH	IH_{10}
U1-350	13	No	30	Natural	O	10	9	TA	TA_4; GB_3; WB_3
U1-78	17	No	30	Reforested	O/P	3	12	BL	BL_9; IH_1
U1-363	9	No	30	Natural	O	-	-	IH	IH_{10}
U1-356	1	No	30	Natural	O	-	-	IH	IH_{10}
U1-357	9	No	level	Natural	O	-	-	IH	IH_{10}
U1-367	9	No	30	Reforested	D	8	13	RP	RP_9; IH_1
U1-376	4	No	level	Natural	M	-	-	IH	IH_9
U1-366	10	No	30	Reforested	M	13	14	JP	JP_{10}
U1-95	0.3	No	30	Reforested	M	3	12	BL	BL_9; IH_1
U1-431	6	No	30	Natural	NTL	-	-	-	-
U1-429b	4	No	30	Natural	NTL	-	-	-	-
U1-429c	2	No	30	Natural	NTL	-	-	-	-
U1-361	29	No	30	Reforested	M	3	12	BL	BL_9; IH_1
U1-98	8	No	30	Reforested	D	3	12	BL	BL_9; IH_1
U1-99	11	No	30	Reforested	D	8	13	RP	RP_9; IH_1

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section III J (continued)				
U1-97	9	No	30	Natural	D	-	-	IH	IH_9
U1-100	9	No	30	Natural	D	-	-	IH	IH_9
U1-96	35	No	30	Natural	M	-	-	IH	IH_{10}
U1-101	20	No	30	Reforested	M	3	12	BL	BL_9; IH_1
U1-102	3	No	30	Natural	0	-	-	IH	IH_{10}
U1-104	16	No	30	Natural	0	-	-	IH	IH_9
U3-500	1	No	30	Reforested	M	-	-	BL	BL_9; IH_1
U3-452	21	No	30	Natural	0	-	-	IH	-
U3-460	12	No	30	Natural	0	-	-	IH	-
U3-461	5	No	30	Natural	M	-	-	IH	-
U3-462	1	No	5	Natural	NTL	-	-	-	-
U3-463	6	No	30	Natural	M	-	-	IH	IH_9
U3-464	13	No	5	Natural	NTL	-	-	-	-
U3-433	300	15 acres	30	Natural	NTL	-	-	-	-
U3-432	3	No	30	Natural	NTL	-	-	-	-
U3-501	7	No	30	Natural	0	-	-	IH	IH_9
U3-455	7	No	30	Natural	0	-	-	IH	IH_9
U3-454	2	No	30	Natural	0	-	-	IH	IH_9
U3-453	4	No	30	Natural	0	-	-	IH	IH_9
U3-459	7	No	30	Natural	0	-	-	IH	IH_9
U3-457	2	No	30	Reforested	M	-	-	BL	BL_9; IH_1
U3-458	8	No	30	Natural	M	-	-	IH	IH_9
R3-46	17	No	30	Natural	0	-	-	TA	-
					Section III K				
U1-166	42	No	30	Natural	D/P	-	-	IH	IH_{10}
U1-348	50	No	30	Natural	D/P	-	-	IH	IH_{10}

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
				Section III K (continued)					
U1-172	12	No	30	Natural	M/P	-	-	IH	IH_{10}
U1-164	8	No	30	Natural	O/P	-	-	IH	IH_{10}
				Section IV A					
U4-361	47	No	30	Natural	O	7	8	GB	GB_8; WB_2
U4-295	70	No	30	Natural	O	10	10	GB	GB_8; WB_2
U4-342	29	No	30	Natural	D	-	-	IH	IH_{10}
U4-310	48	No	30	Natural	M	-	-	IH	IH_{10}
U4-314	9	No	30	Natural	D	-	-	IH	IH_7; $(WS,BS)_2$
U4-278	29	No	30	Natural	O	-	-	IH	IH_{10}
U4-279	14	No	30	Natural	D	-	-	IH	IH_8
U4-96	11	Yes	level	Natural	NTL	-	-	-	-
U4-98	10	Yes	level	Natural	NTL	-	-	-	-
U4-454	1	No	30	Natural	M	-	-	IH	$IH^1{}_0$
U4-257	1	No	5	Natural	NTL	-	-	-	-
U4-260	3	No	level	Natural	NTL	-	-	-	-
U2-32	19	No	30	Natural	O	-	-	IH	IH_{10}
U4-471	21	No	30	Natural	NTL	-	-	-	-
U4-292	139	No	30	Natural	O/P	-	-	IH	IH_{10}
U4-458	18	No	30	Reforested	O/P	-	-	RP	RP_{10}
				Section IV B					
U2-11	0.3	No	level	Natural	O	-	-	IH	IH_{10}
U2-23	8	No	30	Reforested	O	-	-	RP	RP_{10}
U2-409	11	No	30	Reforested	O	-	-	RP	RP_{10}
U2-247	36	Yes	10	Natural	NTL	-	-	-	-
U2-246	254	181 acres	10	Natural	NTL	-	-	-	-
U2-411	103	No	30	Reforested	O	-	-	RP	RP_{10}

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section IV B (continued)									
U2-22	71	No	30	Reforested	0	-	-	RP	RP_{10}
U2-25	17	No	30	Reforested	0	-	-	RP	RP_{10}
U2-13	25	Yes	10	Reforested	0	-	-	RP	RP_{10}
U2-14	5	3 acres	10	Natural	0	-	-	IH	-
U2-408	36	No	30	Reforested	M	-	-	RP	RP_{10}
U1-220	83	41 acres	15	Natural	NTL	-	-	-	-
U1-219	30	No	30	Reforested	0	-	-	RP	RP_{10}
U1-217	13	No	30	Reforested	0	-	-	RP	RP_{10}
U1-215	8	No	25	Natural	0/P	-	-	IH	IH_{10}
U1-213	11	Yes	10	Reforested	0	-	-	RP	RP_{10}
In Stand U1-213, 5 acres are not reforested, and 6 acres are reforested.									
Section IV C									
U1-201	47	No	25	Natural	D	-	-	-	-
U1-205	4	No	level	Natural	M	4	12	GB	GB_9; $(TA, WB)_1$
Stand U1-205 is only partially (4 acres) on mined land.									
Section IV D									
U1-139	29	No	30	Reforested	M	13	11	Pine	JP_3; RP_3; AP_3; IH_1
U1-138	21	No	30	Reforested	M	13	10	BL	BL_7; JP_1; RP_1; IH_1
U1-230	14	No	30	Reforested	M	13	10	BL	BL_7; JP_1; RP_1; IH_1
U1-277	6	No	30	Natural	D	-	-	IH	IH_{10}
U1-278	12	No	30	Natural	M	-	-	IH	IH_{10}
U1-374	9	No	15	Natural	0	-	-	IH	IH_{10}
U1-279	61	No	30	Natural	M	-	-	IH	IH_9
U1-368	50	No	30	Reforested	M	13	10	BL	BL_7; JP_1; RP_1; IH_1
U1-227	3	No	30	Natural	D	-	-	IH	IH_9
U1-156	30	No	30	Reforested	M	9	10	BL	BL_7; JP_2; IH_1

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section IV D (continued)									
U1-149	9	No	25	Reforested	M	8	10	BL	BL_8; JP_1; IH_1
U1-370	89	No	25	Reforested	M	8	10	BL	BL_8; JP_1; IH_1
U1-146	17	No	30	Natural	O/P	5	6	GB	GB_5; PC_3; AC_2
U1-371	3	No	30	Natural	O	-	-	IH	IH_{10}
U1-143	52	No	30	Natural	M	-	-	IH	IH_{10}
U1-136	21	No	30	Natural	D	-	-	IH	IH_{10}
U1-373	0.4	No	10	Reforested	O	13	11	Pine	JP_3; RP_3; AP_3; IH_1
U1-369	21	No	30	Reforested	M	13	10	BL	BL_7; JP_1; RP_1; IH_1
U1-228	13	No	30	Reforested	D	-	-	BL	-
U1-229	2	No	30	Reforested	D	-	-	BL	-
U1-372	3	No	30	Natural	M/P	-	-	IH	IH_{10}
U1-232	15	No	30	Reforested	M	13	10	BL	BL_7; JP_1; RP_1; IH_1
Section IV E									
U1-226	88	No	30	Natural	O/P	-	-	IH	IH_{10}
U1-264	19	No	30	Natural	O/P	8	7	TA	TA_4; GB_3; WB_3
U1-261	25	No	30	Natural	O/P	-	-	IH	IH_{10}
U1-247a	47	No	30	Reforested	O	-	-	Pine	-
U1-247b	66	No	30	Natural	O	3	3	TA	TA_4; GB_3; WB_3
U2-279	13	No	30	Natural	O	-	-	IH	IH_{10}
U2-295	9	No	30	Natural	O	-	-	IH	IH_{10}
U2-293	15	No	30	Natural	O/P	10	8	TA	TA_5; GB_4; PC_1
U2-288	13	No	level	Natural	O	-	-	IH	IH_{10}
U2-292	6	No	25	Natural	O/P	10	10	GB	GB_5; PC_2; TA_3
Section V A									
V1-46a	74	No	25	Natural	O	4	3	GB	GB_6; TA_4; TL_1
V1-53	14	No	5	Natural	O/P	-	-	IH	IH_7; $(WS,BS)_2$

Stand #	Stand Area (Acres)	Contoured	Slope (^{c})	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section V A (continued)									
V3-333	10	No	25	Natural	0	4	3	GB	GB_6; TA_3; TL_1
Section V B									
V1-35	73	No	30	Natural	O/P	4	3	TA	TA_6; GB_3; WB_1
V1-24a	33	No	30	Natural	O/P	7	5	TA	TA_7; GB_2; $(TL,WB)_1$
V1-18	17	No	30	Natural	O/P	5	3	GB	GB_5; TA_3; WB_1
V1-17	15	No	30	Natural	O/P	-	-	IH	IH_9
Section V C									
V1-46b	4	No	5	Natural	NTL	-	-	-	-
V1-40	77	No	30	Natural	O/P	4	3	GB	GB_5; TA_4; WB_1
V1-205	26	No	30	Natural	0	4	3	TA	TA_5; GB_4; $(AW,RM,WB)_1$
V1-200a	8	No	30	Natural	O/P	-	-	IH	IH_{10}
Section V D									
U2-112	15	No	30	Natural	M	9	8	TA	TA_8; GB_1; BP_1
V1-24b	13	No	30	Natural	0	7	5	TA	TA_7; GB_2; $(TL,WB)_1$
V1-14	25	No	30	Natural	0	7	6	TA	TA_5; GB_4; WB_1
V1-11	48	No	30	Natural	0	12	10	TA	TA_5; GB_2; WB_1; $(AW,TL)_1$
V1-214	9	No	30	Natural	0	9	8	TA	TA_8; GB_1; BP_1
Section V E									
U2-133	45	No	30	Natural	0	3	3	TA	TA_6; GB_1; TL_1
U2-129	18	No	30	Natural	O/P	10	10	TA	TA_7; GB_1; WB_1; BP_1
	Stand U2-129 is only partially on mined land.								
U2-128	13	No	30	Natural	M	10	10	TA	TA_7; GB_1; WB_1; BP_1

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section V F									
U2-142	51	No	30	Natural	O/P	10	8	TA	TA_9; $(PC,GB,WB)_1$
U2-136	24	No	30	Natural	O/P	3	3	TA	TA_7; GB_1; WB_1; $(TL,WB,BS,BP)_1$
U2-143	25	No	30	Natural	M/P	10	8	TA	TA_7; GB_2; AW_1
Section V G									
U2-121	103	No	30	Natural	M/P	12	10	TA	TA_7; GB_2; $(JP,BP)_1$
U2-117	52	14 acres	40	Natural	NTL	-	-	-	-
U2-116	4	No	35	Natural	O/P	-	-	IH	-
V1-200b	11	No	30	Natural	M/P	-	-	IH	IH_{10}
V1-194	28	No	30	Natural	O	10	7	GB	GB_5; TA_3; WB_2
V1-193	39	No	30	Natural	O	10	7	GB	GB_5; TA_3; WB_2
V1-190	30.2	No	40	Natural	NTL	-	-	-	-
Section V H									
U2-145	26	No	30	Natural	D	25	30	TA	TA_6; BF_2; WP_1
Section V I									
U2-178	17	Yes	10	Natural	O	4	3	TA	TA_4; GB_2; WB_2; $(AL,TL)_2$
U2-179	14	5 acres	30	Natural	M	10	7	GB	GB_7; TA_2; $(WB,JP,WP)_1$
Contoured area of Stand U2-179 has a 10° slope - U2-179 is only partially on mined land.									
Section V J									
R4-72	12	No	30	Natural	NTL	-	-	-	-
R4-71	35	No	30	Reforested	M	10	10	SP	SP_8; BL_1; IH_1
R4-118	5	No	30	Natural	M	-	-	IH	IH_9
U2-382	150	No	30	Natural	O/P	10	8	GB	GB_4; TA_3; WB_2; PC_1

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section V J (continued)									
U2-374	129	No	30	Natural	O/P	10	7	WB	WB_4; GB_2; TA_2; $(WS,TL)_1$
U2-372	35	No	25	Natural	O/P	10	7	TA	TA_7; GB_2; WB_1
U2-376	2	No	30	Natural	O/P	10	7	TA	TA_7; GB_2; WB_1
U2-377	46	No	30	Natural	D/P	-	-	TA	-
U2-378	17	No	30	Natural	O/P	15	12	TA	TA_5; WB_2; GB_2; BP_1
U2-373	24	No	25	Natural	D/P	-	-	IH	-
R4-117	57	No	30	Natural	O	10	7	WB	WB_4; GB_2; TA_2; $(WS,TL)_1$
R4-115	44	No	30	Reforested	D	10	10	SP	SP_8; BL_1; IH_1
Stands U2-384, 383, 386 (partially), 387 (partially), 392 (partially), and 385 are newly mined land, no tree life, area totalling 110 acres.									
Section V K									
R4-73	63	No	30	Natural	NTL	-	-	-	-
R4-86	12	No	30	Natural	O	15	15	WB	WB_5; TA_2; $(WP,RM)_1$; PC_1; GB_1
R4-75a	29	No	30	Reforested	M	10	10	SP	SP_8; BL_1; IH_1
R4-85a	23	No	30	Natural	O	-	-	IH	IH_9
R4-66	12	No	30	Natural	D	-	-	IH	IH_8; SW_2
Stand R4-66 is partially on mined land.									
R4-87a	28	No	30	Natural	NTL	-	-	-	-
Stands R4-75a, 85a, 87a partially in Section V K.									
Section V L									
R4-85b*	28	No	30	Natural	O	-	-	IH	IH_9
R4-75b*	7	No	30	Reforested	M	10	10	SP	SP_8; BL_1; IH_1
R4-83	31	No	30	Reforested	M	10	10	SP	SP_8; BL_1; IH_1
R4-87b*	3	No	30	Natural	NTL	3	2	GB	GB_6; TA_4

*Stand R4-85b, 75b, 87b are in Sections V L and V K

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
Section V L (continued)									
R4-80	6	No	30	Natural	M	-	-	IH	IH_8; SW_2
	Stand R4-80 is partially on mined land.								
R4-40	24	No	30	Natural	0	-	-	IH	IH_9
Section V M									
R4-82	26	No	30	Natural	M	-	-	IH	IH_9
R4-234	33	No	30	Natural	M	-	-	IH	IH_{10}
R4-401	8	No	30	Natural	0	10	10	SP	SP_8; BL_1; IH_1
R4-209**	18	Yes	5	Natural	NTL	-	-	-	-
R4-193**	3	Yes	5	Natural	NTL	-	-	-	-
R4-197**	27	22 acres	5	Natural	NTL	-	-	-	-
R4-200**	6	Yes	5	Natural	NTL	-	-	-	-
R4-201**	18	No	30	Natural	NTL	-	-	-	-
	**Stands R4-201, 200 197, 193, 209 are partially on mined land.								
R4-81a	100	No	30	Natural	0	-	-	IH	IH_{10}
R4-81b	314	293 acres	5	Natural	NTL	-	-	-	-
R4-205	18	4 acres	30	Natural	NTL	-	-	-	-
R4-206	25	16 acres	5	Natural	NTL	-	-	-	-
R4-207	10	Yes	5	Natural	NTL	-	-	-	-
R4-204	16	8 acres	5	Natural	NTL	-	-	-	-
R4-208	13	Yes	5	Natural	NTL	-	-	-	-
R4-202	7	No	30	Natural	NTL	-	-	-	-
R4-203	14	8 acres	5	Natural	NTL	-	-	-	-
R4-211	3	Yes	5	Natural	NTL	-	-	-	-
R4-210	5	Yes	5	Natural	NTL	-	-	-	-
	Stands R4-210, 211 are partially on mined land.								

Stand #	Stand Area (Acres)	Contoured	Slope (°)	Stand Origin	Stand Stocking	Average Tree Ht. (ft.)	Average Tree Age (years)	Major Tree Species	Species Composition
					Section V N				
U2-323	20	No	30	Natural	M/P	10	6	GB	GB_5; TA_4; JP_1
U2-327	28	No	25	Natural	M/P	12	10	WB	WB_5; GB_2: TA_3
U2-328	20	Yes	10	Natural	NTL	-	-	-	-

Stand Stocking

D - Dense Stocking
M - Medium Stocking
O - Open Stocking

NTL - No Tree Life
P - Patchy

Note : Forest Inventory maps and areas do not correspond exactly with Orthophoto maps and areas.

Table A-1 (b)
Definition of Species Abbreviations and Their Scientific Names

Abbreviation	Definition	Scientific Name
AC	Alders on cut	-
AP	Austrian Pine	*Pinus nigra* Arnold
AW	Alders on water	-
BC	Black Cherry	*Prunus serotina* Ehrh.
BF	Balsam Fir	*Abies balsamea* (L.) Mill.
BL	Black Locust	*Robina. Pseudo-Acacia* L.
BP	Balsam Poplar	*Populus balsamifera* L.
BS	Black Spruce	*Picea mariana* (Mill.) BSP.
GB	Gray Birch	*Betula populifolia* Marsh.
HW	Hardwoods	-
IH	Intolerant Hardwoods	-
JP	Jack Pine	*Pinus Banksiana* Lamb.
LT	Large Tooth Aspen	*Populus grandidentata* Michx.
NS	Norway Spruce	*Picea Abies* (L.) Karst.
PC	Pin Cherry	*Prunus pensylvanica* L.
RM	Red Maple	*Acer rubrum* L.
RP	Red Pine	*Pinus resinosa* Ait.
SP	Scotch Pine	*Pinus sylvestris* L.
SW	Softwoods	-
TA	Trembling Aspen	*Populus tremuloides* Michx.
TL	Tamarack	*Larix laricina* (Du Roi) K. Koch
WB	White Birch	*Betula papyrifera* Marsh.
WP	White Pine	*Pinus Strobus* (L.)
WS	White Spruce	*Picea glauca* (Moench) Voss

Table A - 2(a)

Physical Characteristics of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	DNR Angling Pond #	DNR Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
			Section I A					
1	-	-	1.5	17	6.0	72	spring	-
2	-	-	1.0	15	6.0	70	-	-
4	-	-	1.0	22	4.5	68	-	-
7	-	-	0.75	11	4.0	68	-	-
9	-	-	5.0	16	6.0	68	-	-
11	-	-	5.0	52	7.8	68	spring	-
12	-	-	0.5	28	6.5	72	1	-
13	-	-	0.75	32	6.0	72	-	-
17	-	-	9.0	22	6.4	64	1	-
18	-	-	1.0	13	5.0	70	-	-
38	-	-	3.0	25	8.1	66	-	1
49	-	-	2.0	16	7.3	63	-	-
57	-	-	0.75	5	6.5	68	-	1
81	-	-	2.2	20	6.8	67	1	-
			Section I B					
83	-	-	4.5	26	6.0	68	spring	1
			Section I C					
91	-	-	4.0	35	6.0	68	-	-
92	-	-	9.0	30	6.0	66	-	-
96	-	-	2.0	17	3.5	68	-	-
98	-	-	2.0	19	6.0	66	-	1

Pond #	DNR #	Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
			Section I D					
99	-	-	3.0	45	6.5	61	-	1
100	-	-	1.0	14	6.0	61	-	-
104	87	-	6.5	46	6.0	63	-	-
105	84	-	1.5	11	5.5	64	-	-
107	83	-	1.0	11	5.0	65	1	-
			Section I E					
137	56/57	Horsetail Boomerang	0.75	17	6.7	17	-	1
162	267	Crystal "B"	2.5	16	7.0	74	1	1
168	269	Meadows	2.0	33	6.9	73	-	-
178	-	-	2.5	7	6.0	61	-	1
180	270	Square-Tail	3.25	25	6.9	73	1	1
205	-	-	5.25	11	5.4	75	-	-
206	272	Shepperd	1.0	18	7.5	75	-	-
207	-	Pine Tree	0.25	14	7.2	77	-	-
208	274	Whiskey "3"	0.75	17	7.5	73	1	-
209	274	Whiskey "2"	0.75	19	7.1	73	1	1
210	274	Whiskey "1"	1.0	21	7.3	73	-	1
211	-	-	0.75	15	7.0	75	-	1
212	-	Sentry	0.25	10	5.0	73	-	-
215	34	Cattail	1.0	18	6.0	73	1	-
217	-	-	1.0	15	6.5	75	-	-
219	35	Milky	0.5	15	6.0	73	-	-
228	36	Baccaneer	1.5	20	6.5	75	-	-
237	511	Midnight	3.25	7	6.0	77	-	1
239	-	-	1.0	7	6.0	77	-	1
243	18	East Rover	3.5	13	6.0	77	-	-

Pond #	DNR #	Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
Section I E (continued)								
247	44/45	North and South Rover	0.75	12	6.0	77	-	-
270	112	Survey(?)	6.0	12	6.0	61	6 springs	1
272	115	-	2.25	9	5.5	66	-	1
295	108	Tiger or Canyon	6.0	22	7.0	73	1	-
296	407	-	2.0	7	6.0	61	1	1
299	106	-	2.0	22	6.5	72	-	-
300	24	Princess	2.0	20	6.5	72	-	-
Section I F								
303	27	Malachite	3.0	22	7.0	73	-	-
304	26	Azure	2.0	23	7.0	73	-	-
305	-	-	1.0	8	6.5	75	-	-
Section II A								
307	177,178, 184-186	-	7.0	26	4.0	64	-	-
Section II D								
311	-	-	5.5	13	4.0	73	-	1
312	-	-	4.0	18	7.0	77	-	-
319	166	-	11.5	30	6.0	75	-	-
324	159)	324/325	7.0	22	3.0	79	-	-
325	159)	Connected	9.0	29	3.0	79	-	-
326	157,158, 169?	-	9.0	30	6.0	75	-	-

Pond #	DNR Angling Pond #	Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
			Section II I					
331	-	-	2.0	15	6.0	64	-	-
			Section II K					
332	-	-	4.0	25	3.5	77	1	-
333	21	Bog Pond	7.5	3	3.5	75	-	-
345	23	-	3.0	10	5.0	77	-	-
348	22	-	4.5	16	5.0	75	-	-
354	-	-	21.0	>50	6.0	72	1	-
356	-	-	2.0	41	4.5	73	-	-
357	15	-	4.5	25	5.5	75	-	-
362	-	-	1.0	19	4.5	73	-	-
			Section II L					
364	-	-	3.0	14	6.0	72	-	1
			Section II M					
366	11	-	1.0	13	4.0	73	-	-
			Section II N					
369	179	-	3.0	33	6.0	68	-	-
379	183	-	2.5	12	5.5	73	1	1
			Section II O					
396	-	-	1.0	9	5.5	73	-	-
408	-	-	4.5	13	5.5	75	-	-

Pond #	DNR #	Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
Section II O (continued)								
419	134	-	1.5	12	6.0	75	-	-
420	135	-	8.5	36	7.0	66	-	1
426	140	-	8.5	42	6.5	77	-	-
431	124	-	5.5	6	4.0	68	spring run off stream	-
444	-	Speculator	1.0	14	6.5	75	-	-
445	-	Reef	1.5	18	7.5	75	-	-
446	-	Wangytang	1.0	9	6.5	79	-	-
449	94	-	1.0	15	6.0	72	spring	-
Section II T								
466	201	-	3.5	22	5.5	73	1	-
467	208	-	1.5	35	6.0	73	spring	-
468	211	-	2.0	25	6.0	72	-	-
469	213	-	1.5	27	7.0	73	-	1
477	214	-	5.5	30	6.5	75	-	-
478	200 /242	Chub	1.5	14	7.5	73	-	beaver dam
489	354	Mills Pond	7.5	20	7.0	73	-	-
503	154	-	5.5	35	6.5	73	-	-
504	-	-	2.0	21	6.0	79	1	-
Section III A								
507	-	-	9.5	27	6.0	64	1 2 springs 1 brook	1 to another pond (dry)
508	446	-	2.5	25	7.0	64	-	-

Pond #	DNR #	Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
Section III A (continued)								
509	444	-	1.5	14 (turbid)	7.0	68	-	-
511	-	-	4.0	40	6.0	70	1 (from small pond)	-
513	-	-	2.0	30	2.5	70	1	-
Section III D								
528	-	-	1.5	22	6.0	72	-	-
529	391	-	6.0	23	6.0	70	-	-
Section III E								
537	383	-	3.5	25	3.5	72	1	-
Section III G								
543	387	-	1.5	25	4.5	70	1 (Perley Bk.)	1
545	392	-	1.5	16	6.0	72	-	-
Section III H								
550	414	-	2.0	19	2.5	72	1 (spring)	1
Section III J								
564	431	-	5.5	13	6.0	70	-	-
573	489	Iroquois	6.0	15	6.5	77	-	-
586	402	Anchor	3.0	20	6.0	77	-	-

Pond #	DNR #	Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
			Section III J (continued)					
587	403	Fireweed	3.0	12	6.0	73	-	-
588	-	Oracle	4.0	15	7.0	72	-	-
589	380	Maliseet	13.5	10	6.0	77	-	-
591	396	Windy	4.5	41	6.0	73	-	-
592	-	Avalanche	10.5	36	7.0	68	-	1
595	-	Check	4.0	>50	7.0	72	-	-
605	227	-	32.0	29	6.0	77	1	-
610	229	-	10.5	19	5.5	73	-	1
613	-	-	7.5	37	6.0	72	1	1
			Section III K					
627	291	-	8.5	25	6.0	75	-	-
633	-	-	7.0	40	6.0	70	-	1 (Yes, but stream is dammed)
			Section IV A					
638	584	-	1.5	27	6.0	79	-	-
			Section IV B					
690	546	-	2.0	9	7.0	77	-	-
686	543	-	5.5	10	5.5	68	-	-
			Section IV D					
717	405	Pheasant	1.5	17	6.0	73	-	-

Pond #	DNR #	Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
			Section IV D (continued)					
718	404	Whistler	22.0	5	7.0	75	-	-
719	293	Gypsy	14.5	39	7.0	75	-	-
721	395	Lakeside	11.0	30	7.0	75	-	-
722	503	Icicle	5.5	24	5.5	75	-	-
726	382	Wishbone	5.5	25	6.0	77	-	-
727	300	-	4.0	21	5.5	75	1	-
732	295	-	13.0	21	5.0	77	-	1
733	293	-	6.5	34	5.0	77	-	-
737	307	-	7.5	41	6.0	77	-	-
739	308	-	5.0	>50	6.5	77	-	-
743A	-	-	7.5	36	4.0	79	-	-
743B	-	-	5.5	37	4.5	68	-	-
743C	-	-	17.5	50	5.5	72	-	-
			Section IV E					
617	314	-	7.0	24	6.5	81	-	-
757	312	-	4.5	24	6.0	81	-	-
758	313,316 317	-	4.5	15	6.0	81	-	-
760	477	-	3.5	12	6.0	81	-	-
854	-	-	10.0	31	6.0	72	-	-
855	-	-	11.3	18	6.0	77	2 springs	-
			Section V A					
766	-	-	2.0	9	4.0	68	spring & brook	brook

Pond #	DNR #	Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
			Section V B					
770	615	-	2.0	7	5.5	66	-	1
774	611	-	4.0	10	7.0	75	-	-
			Section V D					
775	608	-	2.0	18	6.0	66	springs & brook	-
			Section V E					
786	-	-	2.5	17	7.0	72	springs	1
789	-	-	3.0	24	7.0	75	1	-
			Section V F					
792	520	-	1.0	10	6.0	70	1	-
			Section V G					
806A	525	-	0.5	3	6.0	72	spring	-
806B	525	-	1.0	5	6.0	68	1	-
			Section V I					
812	-	-	0.5	6	7.0	70	-	1
			Section V J					
824	499	-	1.5	6	5.5	61	-	-

Pond #	DNR Angling Pond #	DNR Angling Pond Name	Surface Area (acres)	Maximum Depth (feet)	pH	Temp. (°F)	Inlet	Outlet
			Section V K					
832	-	-	4.5	16	5.5	70	-	-
838	463/466	-	1.0	12	6.0	75	1(dries up)	-

Priority Ponds[1] are defined as ponds created by strip mining with areas exceeding approximately one acre. Also included are DNR angling ponds with acreages less than one acre.

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond	ACCESSIBILITY	DESCRIPTION OF ADJACENT SLOPES		EMERGENT VEGETATION	
#	Road to Site/ Site to Shore	Slope(°)	Percent and Type of Vegetation	Percent and Type of Vegetation	Current Utilization
			Section I		
1	poor/poor	30	(20) trees	(>1) grasses	nil
2	poor/poor	30/highwall	(30) trees	(>1) -	nil
4	fair/good (swampy)	15	(80) trees	- grasses	nil
7	poor/poor (no roads)	25	- trees,grass,moss	(90) crab grass at shore	nil
9	poor/poor (no roads)	30	- trees	(25) -	ducks, beaver
11	good/good	30/highwall	(40) trees	(1) grasses,cattails	nil
12	poor/poor (no road, portage to pond # 13)	30	- -	(>1) grasses	nil
13	poor/poor	35	- -	(>1) grasses	nil
17	good/good	40/highwall	(40) trees	(>1) cattails	nil
18	fair/good	25/highwall pyrite	- trees	(85) grasses, cattails, bottom vegetation	muskrats, marsh birds
38	good/fair (road is close to pond, but not to shore)	30/steep banks	some trees	(40) cattails, grasses, alders	nil
49	good/poor (road 100 feet from water, poor access by foot)	45/highwall	- -	(1) grasses	nil
57	good/fair	40	- -	- cattails, horsetails, grass	dump on south side
81	fair/good	20	some poplar and other vegetation	nil	nil

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond	ACCESSIBILITY	DESCRIPTION OF ADJACENT SLOPES		EMERGENT VEGETATION	
#	Road to Site/ Site to Shore	Slope(°)	Percent and Type of Vegetation	Percent and Type of Vegetation	Current Utilization
83	fair/good	30/highwall	- -	(>1) grasses, cattails	some dumping
	(fifteen feet to water, contoured to 30° on one side)				
91	fair/fair	40	no trees	(>1) grasses,cattails	nil
92	fair/fair	50/highwall	- -	nil	nil
96	good/fair	5/contoured/ lots of pyrite	(10) trees	(>1) cattails, grasses	garbage dump
98	good/good	5/contoured	(10) trees	(20) grasses, cattails	nil
99	fair/good	10	no trees	nil	nil
	(pond # 99 and # 100 are connected)				
100	fair/good	10	no trees	nil	nil
104	good/good	10/contoured/ highwall(20 ft. to water)	few trees	(>1) grasses	nil
105	fair/good	25	(80) trees (10% treed on edge of mine)	(90) grasses, cattails	nil
107	fair/good	25	(85) trees		
137	good/fair	25/gradual slopes	(90) trees	(95) cattails, grasses	angling
162	good/good	5/mostly gradual slopes	(85) trees	(95) grasses, cattails	angling, (duck boxes, beaver hut)
168	good/good	30	(70) trees	(80) trees, cattails, grasses	angling(duck box)
178	good/good	5	(95) trees, grasses	(60) grass along shore and in water	ducks(4 duck boxes)
180	good/good	30/some steep slopes	(90) trees	(95) grass, cattails, some marsh areas/lots of algae and bottom vegetation	angling

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
205	poor/poor (fair by boat)	25/gradual slopes	(95) trees	(95) grasses, cattails (old bog filled in)	ducks
206	good/good	15/flat 45%/ sloped 55%	(35) trees	(80) grasses, cattails	angling
207	good/good	5/flat	(30) trees	(90) grasses, cattails	angling
208	good/good	5	few trees	(75) grasses, cattails	angling
209	good/good	5/some gradual slopes	few trees	(35) grasses, cattails	angling
210	good/good	5/some gradual slopes	few trees	(30) grasses, cattails	angling
211	good/good	15/few steep areas	(60) trees	(75) grasses, cattails	nil
212	good/good	30	(5) trees	(>1) grass, cattails	angling
215	good/good	25	(90) trees	(95) grass,cattails	angling(duck box)
217	good/good	20	(40) trees	(5) grasses	nil
219	good/fair	20	(80) trees	(95) grasses, cattails	nil
228	fair/good	25	(45) trees	(65) grasses, cattails	angling
237	good/good	10	(90) trees	(70) grasses, cattails	beaver(hut and dam)
239	good/good	10	(90) trees	(70) grasses, cattails	beaver(hut and dam)
243	inaccessible	10/excessive pyrite	(75) trees	(95) grasses, cattails	ducks, beaver,trout
247	inaccessible	10/excessive pyrite	(75) trees	(95) grasses, cattails	ducks, beaver, trout
270	good/fair	45/highwall (50 ft. to water)	(20) trees	(>5) grasses, cattails	beaver
272	good/good	45/highwall (40 ft. to water)	(95) trees, grasses	(60) grass, lily pads, thick carpets of algae	beaver

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	DESCRIPTION OF ADJACENT SLOPES Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
295	good/good	45/highwall (50 ft. to water)	(85) trees	(95) grasses, cattails	angling
296	good/poor	40	(95) trees, grass	(85) grasses, cattails	beaver
299	poor/ inaccessible	40/highwall (30 ft. to water/pyrite)	(20) trees	(5) grass	nil
300	good/good	20	(70) trees	(95) grasses, cattails	angling
303	good/good	25	(85) trees	(95) grasses, cattails	angling
304	good/good	25	(85) trees	(95) grasses, cattails	angling
305	good/good	25	(85) trees	(95) grasses, cattails	nil

Section II

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	DESCRIPTION OF ADJACENT SLOPES Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
307	good/good	20/highwall	(10) trees	(>1) grass, algae	garbage
311	good/good	30/pyrite	(20) trees, some grass	(60) cattails, sedges and grasses	nil
312	fair/good	20	(20) trees	(5) grasses	nil
319	good/fair	25/highwall (10 ft. to water)	- -	(1) grasses	nil
324	good/good	30/banks 30 ft. high, barren	(5) trees	(>1) grasses	beaver dam
325	good/ inaccessible	30/banks 20 ft. high,barren	(10) trees	(5) grasses	nil
326	good/fair	30/highwall/ (10 ft. highwall)	(90) trees	(1) grasses	nil
331	fair/good	20	(70) trees, grasses	(>1) grasses	nil
332	good/good	30/10 ft. banks partially old bog	(60) trees	(70) grasses	ducks, some dumping

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
333	good/good	20/5-10 ft. banks/bog half mined	- -	(1) on mined land, (100) on non-mined land	duck boxes
345	poor/good	30/45 ft. banks	(20) trees	(65) grasses, cattails	nil
348	good/fair	30/30 ft. banks/ pyrite	(40) trees	(2) grasses	nil
354	good/poor	30/highwall	(70) trees, fireweed	(40) cattail, grasses, sedges	nil
356	good/good	30	(10) trees	(30) grass, cattails, willows, rushes	nil
357	good/fair	30/35 ft. banks/ pyrite	(10) trees	(40) grass, cattails	nil
362	good/poor	30	(25) trees	(4) rushes	nil
364	good/fair	25/12 ft. banks	(65) trees	(80) grasses	some dumping
366	good/fair	30	(25) trees, horsetails	(100) rushes, horsetails, sedges, mosses	swimming hole
369	poor/poor	20	(90) trees	(95) cattails, alders	nil
379	good/fair	25/20 ft. banks	(20) trees	(80) grasses	beaver
396	good/poor	45/highwall (30 ft. to water)	(35) trees, golden rod, alders	(20) mints, cattails, willows, mosses	dump
408	good/fair	30/35 ft. banks	(40) trees, golden rod, fireweed	(60) mints, sphagnum, mosses, grasses	ducks
419	good/fair	40	(45) trees, coltsfoot, golden rod	(25) water hemlock, mints	dumping
420	fair/fair	30/highwall (40 ft. to water)	(10) trees, grasses	(>5) cattails	water supply for Flower's Cove Fish Hatchery

Table A - 2(b)

Description of Selected Priority[1] Ponds
in the Minto-Chipman Area

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	 Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
426	good/good	30/10-15 ft. banks	(85) trees	(70) cattails, trees	fish hatchery
431	poor/poor	30/highwall (40 ft. to water)	(40) trees	(5) rushes, sedges	nil
444	fair/fair	30	(80) -	(100) cattails,willow,alder	angling pond, merganser ducks
445	good/fair	25	(90) trees, grasses	(85) grasses, cattails	fishing
446	poor/poor	25/accessible only on foot or by canoe	(95) trees, grasses	(95) grasses, cattails, some trees	beaver
449	good/good	40/highwall (50 ft. to water)	(30) trees	(80) grasses, trees	nil
466	good/fair	30	(20) trees, grasses	(5) grasses, cattails	nil
467	inaccessible by road, portage from pond # 468	40	(70) trees, grasses	(>5)grasses, cattails	nil
468	good/poor	30	(55) trees, grasses	(>10) grasses, cattails	nil
469	good/poor	30	(50) trees,other vegetation	(40) grasses, cattails	nil
477	good/poor	30/pyrite	(10) trees	(>1) grasses	nil
478	good/good	30	(90) trees	(100) grasses, cattails	beaver
489	good/poor	30/some pyrite	(90) trees	(80) grasses, cattails	angling
503	good/good	30	(15) trees	(>1) grasses	dump
504	good/poor	25	(25) trees	(>1) grasses	dump

Section III

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	 Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
507	fair(muddy when wet)/poor(steep)	35/35 ft. banks	(15) poplar, birch, sweet fern	(2) grasses, rushes	active beaver house, some fishing

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	ACCESSIBILITY	DESCRIPTION OF ADJACENT SLOPES		EMERGENT VEGETATION	
	Road to Site/ Site to Shore	Slope(°)	Percent and Type of Vegetation	Percent and Type of Vegetation	Current Utilization
508	none/poor(steep)	35/40 ft. banks	(20) ragwort, sweet clover coltsfoot	(2) grasses, cattails	nil
509	none/fair	30/35 ft. banks	(35) white birch, poplar, sweet clover	(3) cattails, grass	nil
511	good/fair	30/highwall/ pyrite, (25 ft. to water)	(2) trees	(2) cattails, grasses	nil
513	good/poor	30/30 ft. banks/ pyrite	(45) white birch, sweet fern	nil	nil
528	good/poor	40	(20) trees	(10) cattails, willows, alders	ducks
529	poor/poor inaccessible	25/highwall/ 35 ft. to water	(25) trees	(50) grasses, cattails, willows	nil
537	good/fair	30/30 ft. banks	(10) trees	(70) grasses, willows, cattails	dumping
543	good/poor	45/20 ft. banks	(75) trees	(85) alders, grasses, sedges	swimming
545	good/poor	20/highwall	(20) trees	(65) alders, cattails, grasses, willows	nil
550	good/good	45/35 ft. banks	(5) trees	(5) cattails, grasses	dump
564	good/fair	25/15 ft. banks	(65) grass, poplar,vetch	(80) cattails, grasses,	active beaver house
573	good/fair	30/highwall/ 65 ft. banks	(20) trees	(2) grasses	nil
586	good/poor	40/45 ft. banks	(10) trees	(25) grasses, alders	dumping
587	good/fair	40/25 ft. banks	(70) alders, grass	(25) alders, cattails	angling
588	poor/good	30/30 ft. banks	(85) alders, vetch	(40) cattails, rushes, vetch, grasses	dumping
589	fair/good	20/6 ft. banks	(70) trees	(70) cattails, grasses, alders	ducks, angling

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

	ACCESSIBILITY	DESCRIPTION OF ADJACENT SLOPES		EMERGENT VEGETATION	
Pond #	Road to Site/ Site to Shore	Slope(°)	Percent and Type of Vegetation	Percent and Type of Vegetation	Current Utilization
591	good/fair	30/25 ft. banks	(80) poplar, birch	(50) cattails, grasses	angling
592	good/fair	35/25 ft. banks	(70) poplar	(35) cattails, mint	angling, beaver dam
595	good/good	35/30 ft. banks	(40) trees, poplar, birch	(35) cattails, grasses	angling
605	good/good	30/highwall/ 50 ft. banks	(10) trees	(10) cattails, grasses	nil
610	good/poor	50/40 ft. bank	(20) grass	(40) alder, rush, cattails	beaver dam on outlet
613	good/good	30/highwall/ 65 ft. banks	(10) trees	(5) cattails, alders, grasses, rushes, sedges	beaver
627	good/poor	45/25 ft. banks	(40) trees, poplar	(95) cattails, rushes	trout, old beaver cuttings
633	good/fair	25/10 ft. banks/ some pyrite	(35) trees	(85) cattails, grasses, alders	nil(old equipment dump)
			Section IV		
638	fair/poor	30/highwall/ 30 ft. banks	no trees	nil	old pulp dumped in pond
686	fair/poor	40/30 ft. banks	(10) vegetated, no trees	(1) grasses, sedges	nil
690	good/poor	30	(>5) trees	(40) cattails, horsetails	beaver
717	good/poor	40/30 ft. banks	(70) trees, black locust	(60) cattails, golden rod, sweet fern	nil
718	good/poor	40/40 ft. banks	(95) trees	(100) cattails	ducks, beaver
719	good/fair	30/20 ft. banks/ pyrite	(65) trees, poplar, birch	(25) alder, mint	active beaver house
721	good/poor (black locust)	45/50 ft. banks	(90) trees, black locust	(60) willows, cattails, alders	angling

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
722	good/fair	25/15 ft. banks	(20) trees	(20) cattails, grasses, alders	angling
726	good/fair	30/10-40 ft. banks	(60) trees	(50) cattails, willows, alders, bushes, grasses	angling
727	good/poor	25/5 ft. banks	(60) trees	(100) cattails, grasses, alders	nil
732	good/but only by canoe	25/8 ft. banks	(75) trees	(95) cattails, grasses, alders	beaver
733	poor/fair	30/35 ft. banks	(45) trees, poplar, birch	(40) cattails, sedges, alder	nil
737	good/poor	30/highwall/ 40 ft. banks/pyrite	(85) trees	(30) mint, willows, alders, cattails, grasses	nil
739	fair/fair	30/10-45 ft. banks	(30) trees	(15) mint, willows, cattails, bushes	nil
743A	- -	30/35 ft. banks	(35) trees	(10) willows, rushes, mint, poplar	angling
743B	- -	35/15 ft. banks	(75) trees, mints	(35) mint, rushes, horsetails	beaver
743C	fair/fair	40/30 ft. banks	(75) trees, sweet fern	(20) willow, rushes, mosses	beaver
617	fair/poor	30/highwall/ 25 ft. to water	(80) trees	(60) grasses, cattails	beaver, fish
757	poor/poor	25/15 ft. banks	(65) trees	(85) grasses	beaver
758	poor/poor	25/10 ft. banks	(65) trees	(85) grasses	beaver
760	good/good	30/highwall/ 40 ft. to water	(25) trees	(40) grasses	nil
754	good/fair	45/highwall/ 40 ft. to water	(10) trees, grasses	(>1) grasses, cattails	nil

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	DESCRIPTION OF ADJACENT SLOPES Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
755	good/poor	45/highwall/ 30 ft. to water	(15) trees, mints, golden rod, coltsfoot	(2) horsetails	fish
			Section V		
766	good/good	30/highwall/ excessive pyrite	(1) trees	(5) grasses, cattails	sparrows
770	good/poor	25/pyrite	(35) trees	(>5) grasses	garbage dump, beaver dam
774	good/poor	25	(>5) trees	(5) cattails, grasses	garbage, beaver dam
775	good/poor	30/highwall/ 15 ft. to water/pyrite	(>1) trees	(>1) grasses	nil
786	poor/poor	30/highwall/ 25 ft. to water/pyrite	(>1) trees	(2) grasses, cattails	beaver, ducks
789	poor/poor	35/pyrite	(>1) trees	(2) grasses, cattails (except at one end)	beaver, ducks
792	good/poor	30/highwall/ 20 ft. to water/pyrite	(10) trees	(20) grasses, cattails	some dumping
806A	only by canoe	30	(1) trees	(95) at one end of pond, grasses, cattails	nil
806B	good/good	30	- -	(75) grasses	beaver
812	good/good	25/slopes not very high	(10) trees	(85) grasses, cattails	-
824	good/poor	25/pyrite	(60) trees	(80) grasses, sphagnum	some dumping
832	good/poor	25/pyrite	(2) trees	(>1) grasses	beaver

Table A - 2(b)

Description of Selected Priority[1] Ponds in the Minto-Chipman Area

Pond #	ACCESSIBILITY Road to Site/ Site to Shore	DESCRIPTION OF ADJACENT SLOPES Slope(°)	Percent and Type of Vegetation	EMERGENT VEGETATION Percent and Type of Vegetation	Current Utilization
838	good/poor	30/pyrite/ iron also detected	(>1) trees	(2) grasses	nil

---

[1] Priority ponds are defined as ponds created by strip mining with an area exceeding approximately one acre. Also included are certain DNR angling ponds with acreages less than one acre.

[2] Accessibility by road was classified as: (1) good-all-weather gravel, (2) fair-seasonal gravel road (when dry), (3) poor-rough roads (no cars).

[3] Accessibility from shore to pond by foor classified as: (1) good-ponds edge easily reached, (2) fair-some difficulty reaching ponds edge, (3) poor-very difficult to reach ponds edge.

Table A - 2(c)

List of Inventory Pond Numbers With Corresponding Department of Natural Resources Pond Numbers and Names

Section Number	Pond Number	DNR Pond Number	DNR Pond Name	Section Number	Pond Number	DNR Pond Number	DNR Pond Name
I D	104	87	-	I D	105	84	-
I D	107	83	-	I D	109	82	-
I E	118	81	-	I E	137	56/57	Horsetail/Boomerang
I E	138/139	62/63	East Twin/West Twin	I E	162	267	Crystal
I E	168	269	Meadows	I E	180	270	Square-tail
I E	183	271	Setter	I E	184	78	-
I E	185	77	-	I E	188	76	-
I E	191	73	-	I E	195	75	-
I E	196	74	-	I E	198	72	-
I E	200	70	-	I E	202	71	-
I E	206	272	Shepperd	I E	207	-	Pine Tree
I E	208-210	274	Whiskey 1/2/3	I E	215	34	Cattail
I E	219	35	Milky	I E	220-222	273	Brandy
I E	228	36	Buccaneer	I E	237	511	Midnight
I E	238	65	Fox	I E	243	18	East Rover
I E	247	44/45	North/South Rover	I E	254	69	-
I E	260	62	-	I E	261	68	-
I E	263	67	-	I E	270	112	Survey(?)
I E	272	115	-	I E	275	113	-
I E	285	114	-	I E	292	111	-
I E	295	108	Tiger or Canyon	I E	296	107	-
I E	298	109	-	I E	299	106	-
I E	300	24	Princess	I F	303	27	Malachite
I F	304	26	Azure				
II A	307	177/178/184 185/186	-	II C	309	171	-
II C	310	172	-	II D	316	165	-

Table A - 2(c)

List of Inventory Pond Numbers With Corresponding Department of Natural Resources Pond Numbers and Names

Section Number	Pond Number	DNR Pond Number	DNR Pond Name	Section Number	Pond Number	DNR Pond Number	DNR Pond Name
II D	317	164	-	II D	318	163	-
II D	319	166	-	II D	323-325	159	-
II D	326	157/158	-	II D	327	169	-
II F	328	168	-	II G	329	170	-
II K	333	31	-	II K	343	21	-
II K	345	23	-	II K	346	28	-
II K	347	25	-	II K	348	22	-
II K	352	14	-	II K	353	17	-
II K	357	15	-	II K	359	14	-
II K	360	13	-	II M	365	12	-
II M	366	11	-	II M	367	10	-
II N	369	179	Whisper	II N	370	7	-
II N	373	4	-	II N	376	181	Bitter
II N	377	180	Outlet	II N	379	183	Dougtom
II N	382	3	-	II N	386	2	-
II O	397	43	-	II O	398	42	-
II O	400	41	-	II O	401/402	40	-
II O	403	52	-	II O	404	39	-
II O	407	38	-	II O	409	128	-
II O	411	131	-	II O	412	130	-
II O	413	137	-	II O	417	136	-
II O	418	132	-	II O	419	134	-
II O	420	135	-	II O	423	118	-
II O	424	119	-	II O	425	139	-
II O	426	140	-	II O	428	138	-
II O	430	125	-	II O	431	124	-
II O	432	123	-	II O	433	122	-
II O	438	120	-	II O	439	121	-

Table A - 2(c)

List of Inventory Pond Numbers With Corresponding Department of Natural Resources Pond Numbers and Names

Section Number	Pond Number	DNR Pond Number	DNR Pond Name	Section Number	Pond Number	DNR Pond Number	DNR Pond Name
II O	440	144	-	II O	444	-	Speculator
II O	445	-	Reef	II O	446	-	Wangytang
II O	448	95	-	II O	449	94	-
II O	450	93	-	II Q	456	148	-
II R	457	145	-	II R	458	146	-
II R	459	147	-	II S	461	199	-
II T	466	201	-	II T	467	208	-
II T	468	211	-	II T	469	213	-
II T	470	210	-	II T	475	209	-
II T	477	214	-	II T	478	200/242	Chub
II T	482	243	Arrowhead	II T	488	151	-
II T	489	354	Mills Pond	II T	491-494	204	Wrestler Ponds
II T	496	206	Graves	II T	497	205	Breeze
II T	502	152	-	II T	503	154	-
II T	506	153	-				
III A	507	-	Trillium/Lady's Slipper	III A	508	446	-
III A	509	444	-	III A	514	436	-
III B	518	435	-	III C	520	422	-
III C	522	420	-	III C	524	421	-
III D	527	385	-	III D	529	391	-
III D	530	389	-	III D	531	399	-
III D	532	388	-	III E	533	375	-
III E	534	376	-	III E	535	378	-
III E	537	383	-	III E	538	384	-
III G	542	386	-	III G	543	387	-
III G	545	392	-	III H	548	401	-

Table A - 2(c)

List of Inventory Pond Numbers With Corresponding Department of Natural Resources Pond Numbers and Names

Section Number	Pond Number	DNR Pond Number	DNR Pond Name	Section Number	Pond Number	DNR Pond Number	DNR Pond Name
III H	550	414	-	III I	553	423	-
III I	554	427	-	III I	555	428	-
III I	558	429	-	III I	559	433	-
III J	563	413	-	III J	564	431	-
III J	565	258	-	III J	568	279	Rebel
III J	571	285	Daves	III J	572	257	-
III J	573	489	Iroquois	III J	574	257	-
III J	575/576	251	-	III J	578	250	-
III J	583	387	Casper	III J	584	247	-
III J	585	490	Buttercup	III J	586	402	Anchor
III J	587	403	Fireweed	III J	589	380	Maliseet
III J	590	-	Shamrock	III J	591	396	-
III J	592	-	Avalanche	III J	595	-	Check
III J	596	259	-	III J	597	260	-
III J	599	241	-	III J	602	-	Cedar
III J	605	227	-	III J	606	234	-
III J	607	230	-	III J	610	229	-
III J	615	236	-	III J	616	235	-
III J	617	224	-	III J	618	225	-
III J	619	226	-	III K	627	291	-
III K	628	286	-	III K	629	287	-
IV A	636	582	-	IV A	637	583	-
IV A	638	584	-	IV A	641	581	-
IV A	642	580	-	IV A	643	576	-
IV A	645	578	-	IV A	646	575	-
IV A	647	574	-	IV A	648	573	-
IV A	650	563	-	IV A	654	572	-

Table A - 2(c)

List of Inventory Pond Numbers With Corresponding Department of Natural Resources Pond Numbers and Names

Section Number	Pond Number	DNR Pond Number	DNR Pond Name	Section Number	Pond Number	DNR Pond Number	DNR Pond Name
IV A	655	562	-	IV A	658	559	-
IV A	659	560	-	IV A	660	561	-
IV A	661	571	-	IV A	663	564	-
IV A	664	558	-	IV A	665/666	557	-
IV A	668	567	-	IV A	669	568	-
IV A	670	570	-	IV A	671	569	-
IV A	672	565	-	IV A	674	566	-
IV A	678	556	-	IV A	679	555	-
IV A	681	552	-	IV A	682	551	-
IV A	683	554	-	IV A	684	553/538	-
IV A	685	536	-	IV A	686	537	-
IV B	688	548	-	IV B	689	547	-
IV B	690/691	546	-	IV B	695	326	-
IV B	696	543	-	IV B	697	325	-
IV B	699	324	-	IV B	700	328	-
IV B	701	329	-	IV C	702	318	-
IV C	703	320	-	IV C	704	319	-
IV C	707	321/322	-	IV C	708	323	-
IV D	710	303	-	IV D	711	304	-
IV D	712	305	-	IV D	713	407	Pumpkin
IV D	717	405	Pheasant	IV D	718	404	Whistler
IV D	719	293	Gypsy	IV D	720	-	Phantom
IV D	721	395	Lakeside	IV D	722	503	Icicle
IV D	723	-	Fossil	IV D	724	390	Peacock
IV D	725	298	-	IV D	726	382	Wishbone
IV D	727	300	-	IV D	728	299	-
IV D	730	296	-	IV D	732	295	-
IV D	733	293	-	IV D	734	294	-

Table A - 2(c)

List of Inventory Pond Numbers With Corresponding Department of Natural Resources Pond Numbers and Names

Section Number	Pond Number	DNR Pond Number	DNR Pond Name	Section Number	Pond Number	DNR Pond Number	DNR Pond Name
IV D	737	307	-	IV D	738	377	Waxwing
IV D	739	308	-	IV D	743	302	-
IV D	745	297	-	IV D	747	309	-
IV D	748	310	-	IV E	750	311	-
IV E	751	314	-	IV E	752	315	-
IV E	757	312	-	IV E	758	313/316/317	-
IV E	759	471	-	IV E	760	477	-
IV E	761	472	-	IV E	762	479	-
iV E	763	478	-	IV E	765	481	-
V B	768	613	-	V B	769	614	-
V B	770	615	-	V B	774	611	-
V D	775	608	-	V D	776	609	-
V D	780	605	-	V D	781	530	-
V E	785	528	-	V F	791-794	520	-
V F	796	518	-	V F	802	517	-
V F	803	521	-	V G	806	525	-
V G	807	524	-	V J	815	506	-
V J	816	511	-	V J	818	505	-
V J	819	507	-	V J	820	508	-
V J	821	501/499	-	V J	822	501/499	-
V J	823	497	-	V J	825	501	-
V J	827	499	-	V J	828	469	-
V J	829	460	-	V K	838	463/466	-
V K	839	462	-	V K	840	461	-
V L	842	458	-	V L	844	457	-
V L	847	456	-	V L	848	487/486	-

Table A - 2(c)

List of Inventory Pond Numbers With Corresponding Department of Natural Resources Pond Numbers and Names

Section Number	Pond Number	DNR Pond Number	DNR Pond Name	Section Number	Pond Number	DNR Pond Number	DNR Pond Name
V M	849	485	-	V M	850	484	-
V M	851/852	483	-	V M	853	482	-

Table A - 3

Characteristics of Streams Passing Through Strip-Mined Areas Near Minto and Chipman

Stream Number	Stream Name	Sample[1] Location	Date	Flow (ft^3/sec)	pH	Temp (°F)	Origin[2]	Colour[3]
1-1	Eighteen Brook	below	June 21/84	0.57	6.5	65	inside	none
1-2	Unknown	below	June 20/84	3.27	6.0	68	outside	tea/slightly turbid
1-3	Eighteen Brook	below	June 15/84	4.76	4.5	66	outside	tea
1-4	Eighteen Brook	below	June 15/84	0.05	6.0	66	outside	none/some turbidity
1-5	Eighteen Brook	below	Sept. 11/84	11.14	7.0	61	outside	none
1-6	Unknown/Branch of Fulton Brook	below	Sept.11/84	1.10	6.0	52	outside	none
1-7	Unknown	below	July 10/84	0.54	5.5	66	inside	tea
1-8	Grand Lake Little River	below	July 11/84	3.14	7.0	64	outside	tea
1-9	Branch of Grand Lake Little River	below	Sept. 11/84	11.35	7.0	64	inside	none
2-1	Unknown	below	Aug. 14/84	0.23	5.5	66	inside	none/turbid
2-2	Branch of Newcastle Creek	below	Aug. 8/84	0.68	5.5	75	outside	none
2-3	Unknown	below	Aug. 3/84	0.20	5.5	73	inside	none/slightly turbid
2-4	Unknown	below	Aug. 10/84	1.14	5.5	64	inside	none
2-5	Gilchrist Brook	below	Aug. 10/84	4.05	6.0	72	outside	none
2-6	Unknown	below	Aug. 2/84	6.12	7.0	55	inside	none
2-7	Branch of Newcastle Creek	above	Aug. 1/84	0.20	5.5	64	outside	none
3-1	Branch of Salmon River	below	Aug. 21/84	0.85	6.0	57	outside	tea
3-2	Unknown	below	Sept. 10/84	0.34	6.0	66	outside	none
3-3	Unknown	below	Sept. 10/84	0.40	4.0	68	inside	none(stream bottom orange)
3-4	Perley Brook	below	Aug. 21/84	5.00	4.0	70	outside	tea

Table A - 3

Characteristics of Streams Passing Through Strip-Mined Areas Near Minto and Chipman

Stream Number	Stream Name	Sample[1] Location	Date	Flow (ft^3/sec)	pH	Temp (°F)	Origin[2]	Colour[3]
3-5	Unknown	below	Sept. 10/84	9.61	7.0	64	outside	none
3-6	Perley Brook	below	Oct. 4/84	2.61	5.0	50	outside	none
3-7	Vance Brook	below	Oct. 4/84	1.86	6.0	51	inside	none
3-8	Iron Bound Cove Stream	below	Oct. 4/84	20.14	3.0	51	outside	none
4-1	Wilson Brook	below	Oct. 4/84	3.34	6.5	52	outside	none
4-2	Unknown	above	Aug. 15/84	1.52	6.5	66	outside	turbid
4-3	Unknown	below	Sept. 10/84	0.10	7.0	68	inside	none
5-1	Unknown	below	July 20/84	1.66	4.0	66	outside	none
5-2	Unknown	below	July 20/84	1.59	4.0	70	inside	none
5-3	Unknown	above	July 20/84	0.64	6.0	70	outside	tea
5-4	Unknown	below	July 20/84	0.76	5.5	54	inside	none
5-5	Unknown	above	July 19/84	3.05	6.0	64	outside	tea
5-6	Unknown	above	July 13/84	5.61	6.0	66	outside	tea
5-7	Leckey Brook	above	July 12/84	1.80	6.0	70	outside	tea
5-8	Solomon Brook	below	July 20/84	2.12	6.0	64	inside	tea
5-9	Unknown	above	July 23/84	0.98	6.0	48	inside	none

[1] Sample location indicates whether sample was taken above or below mined area.

[2] Origin indicates whether stream originated inside or outside mined area.

[3] Colour is classified as (1) none, (2) tea colour, or (3) turbid.

Table A - 4(a)

Quantitative Analysis of Soil Samples Taken From Strip Mined Areas Near Minto and Chipman

Sample Number	pH	P_2O_5 (lbs/acre)		K_2O (lbs/acre)		Ca (lbs/acre)		Mg (lbs/acre)	
I A/1	4.5	37	VL	89	L	591	L	112	M
I A/2	4.7	37	VL	83	L	1086	M	149	M
I A/3	4.8	55	L	109	M	1240	M	169	M
I A/4	4.9	50	VL	83	L	1180	M	154	M
I B	4.0	23	VL	70	L	974	L	138	M
I C	4.7	41	VL	91	L	1837	M	253	H
I D	4.4	23	VL	95	L	1315	M	244	H
I E/1	4.7	46	VL	97	L	2002	H	208	H
I E/2	4.7	50	VL	94	L	1680	M	213	H
I E/3	4.9	50	VL	90	L	1457	M	199	M
I E/4	4.7	32	VL	61	L	656	L	132	M
I E/5	4.2	18	VL	76	L	45	VL	49	VL
I E/6	4.6	32	VL	87	L	1069	M	189	M
I E/7	4.4	32	VL	73	L	1416	M	197	M
I F	4.2	55	L	57	L	404	VL	150	M
II A	4.3	23	VL	32	VL	396	VL	35	VL
II B	4.6	105	M	54	L	211	VL	53	L
II C	4.8	32	VL	49	VL	700	L	55	L
II D/1	4.3	32	VL	70	L	498	VL	119	M
II D/2	4.7	32	VL	67	L	723	L	128	M
II D/3	4.0	18	VL	53	L	451	VL	111	M
II E	2.8	5	VL	33	VL	115	VL	55	L
II F	4.0	9	VL	52	L	5	VL	62	L
II G	4.2	46	VL	59	L	516	L	176	M
II H	Information Not Available								
II I	5.0	32	VL	82	L	2089	H	180	M
II J	3.6	18	VL	43	L	102	VL	105	M
II K/1	3.9	18	VL	47	VL	55	VL	32	VL

Table A - 4(a)

Quantitative Analysis of Soil Samples Taken From Strip Mined Areas Near Minto and Chipman

Sample Number	pH	P_2O_5 (lbs/acre)		K_2O (lbs/acre)		Ca (lbs/acre)		Mg (lbs/acre)	
II K/2	4.4	32	VL	52	L	401	VL	94	L
II K/3	4.7	41	VL	49	VL	323	VL	73	L
II L	4.2	27	VL	48	VL	394	VL	112	M
II M	5.1	87	L	70	L	736	L	105	M
II N	4.3	46	VL	49	VL	214	VL	71	L
II O/1	5.6	55	L	115	M	2438	H	343	VH
II O/2	4.8	46	VL	85	L	1383	M	262	H
II O/3	4.2	27	VL	54	L	455	L	104	M
II O/4	4.6	41	VL	85	L	1266	M	288	H
II O/5	5.2	50	VL	111	M	1977	M	377	VH
II O/6	5.2	69	L	93	L	1808	M	288	H
II O/7	4.3	27	VL	47	L	972	L	151	M
II O/8	4.2	27	VL	59	L	163	VL	90	L
II O/9	4.5	23	VL	73	L	533	L	113	M
II O/10	4.0	18	VL	64	L	118	VL	74	L
II O/11	4.7	46	VL	77	L	510	L	140	M
II P	4.3	60	L	68	L	1223	M	232	H
II Q	5.8	41	VL	92	L	2061	H	270	H
II R	4.3	23	VL	65	L	54	VL	83	L
II S	3.6	27	VL	29	VL	71	VL	83	L
II T/1	5.7	55	L	88	L	1711	M	179	M
II T/2	4.7	82	L	83	L	913	L	180	M
III A	4.7	64	L	99	L	1131	M	227	H
III B	4.9	64	L	86	L	1369	M	251	H
III C	5.3	46	VL	108	M	2905	H	327	VH
III D	5.0	32	VL	69	L	953	L	310	VH
III E	3.5	18	VL	34	VL	160	VL	38	VL
III F	3.9	18	VL	64	L	45	VL	45	VL

Table A - 4(a)

Quantitative Analysis of Soil Samples Taken From Strip Mined Areas Near Minto and Chipman

Sample Number	pH	P_2O_5 (lbs/acre)		K_2O (lbs/acre)		Ca (lbs/acre)		Mg (lbs/acre)	
III G	4.2	27	VL	101	M	1219	M	307	VH
III H	5.8	50	VL	174	M	4000+	VH	400+	VH
III I	4.3	64	L	155	M	1474	M	329	VH
III J/1	4.6	69	L	103	M	1937	M	316	VH
III J/2	4.9	60	L	71	L	2582	H	322	VH
III J/3	4.4	42	VL	104	M	1134	M	242	H
III J/4	4.5	37	VL	75	L	1553	M	266	H
III J/5	4.5	46	VL	103	M	2052	H	357	VH
III J/6	4.8	60	L	79	L	2003	H	249	H
III J/7	4.8	41	VL	99	L	2319	H	224	H
III J/8	4.7	41	VL	105	M	2775	H	400+	VH
III J/9	4.8	50	VL	117	M	3263	VH	349	VH
III J/10	4.9	174	M	25	VL	112	VL	31	VL
III J/11	4.5	32	VL	59	L	532	L	131	M
III K	4.2	41	VL	75	L	288	VL	90	L
IV A/1	4.3	41	VL	128	M	3539	VH	226	H
IV A/2	5.4	55	L	93	L	2303	H	173	M
IV A/3	5.0	24	VL	88	L	1356	M	222	H
IV B/1	4.5	46	VL	81	L	1871	M	386	VH
IV B/2	5.1	50	VL	348	VH	4000+	VH	400+	VH
IV B/3	4.6	46	VL	130	M	2460	H	231	H
IV B/4	5.9	55	L	111	M	3931	VH	222	H
IV C	4.8	55	L	244	H	1580	M	400+	VH
IV D/1	3.7	54	L	56	L	200	VL	88	L
IV D/2	5.5	59	L	74	L	2424	H	158	M
IV D/3	4.2	14	VL	48	VL	260	VL	124	M
IV D/4	3.8	5	VL	89	L	168	VL	97	L
IV E/1	4.9	64	L	120	M	2269	H	336	VH

Table A - 4(a)

Quantitative Analysis of Soil Samples Taken From Strip Mined Areas Near Minto and Chipman

Sample Number	pH	P_2O_5 (lbs/acre)		K_2O (lbs/acre)		Ca (lbs/acre)		Mg (lbs/acre)	
IV E/2	3.8	37	VL	85	L	3505	VH	387	VH
V A	5.1	73	L	13	VL	428	VL	62	L
V B	3.3	23	VL	75	L	471	VL	150	M
V C	4.3	18	VL	63	L	1080	M	177	M
V D	3.7	23	VL	121	M	3106	VH	233	H
V E	4.9	78	L	93	L	349	VL	102	M
V F	4.3	73	L	44	VL	1558	M	209	H
V G	4.9	50	VL	90	L	1321	M	175	M
V I	4.6	46	VL	63	L	1013	M	194	M
V J/1	4.1	37	VL	78	L	1518	M	255	H
V J/2	4.8	37	VL	46	VL	1340	M	175	M
V J/3	3.7	48	VL	52	L	1218	M	228	H
V K	4.8	34	VL	61	L	1222	M	304	VH
V L/1	4.1	44	VL	69	L	1288	M	236	H
V L/2	4.5	16	VL	77	L	1792	M	400+	VH
V M	4.6	34	VL	56	L	1351	M	279	H

	P2O5, K2O, Magnesium	**Calcium**
VL - Very Low Levels	0 - 50 lbs/acre	0 - 500 lbs/acre
L - Low Levels	51 - 100 lbs/acre	501 - 1000 lbs/acre
M - Medium Levels	101 - 200 lbs/acre	1001 - 2000 lbs/acre
H - High Levels	201 - 300 lbs/acre	2001 - 3000 lbs/acre
VH - Very High Levels	300+ lbs/acre	3000+ lbs/acre

P_2O_5 - Phosphorus
K_2O - Potassium
Ca - Calcium
Mg - Magnesium

Table A - 4(b)

Description of Soil Sample Locations In Mined Areas Near Minto And Chipman

Sample Number	SITE DESCRIPTION Bottom of Slope	Middle of Slope	Top of Slope	DRAINAGE Good	Mod.	Poor	Slope(c) at Sample Site	SOIL TEXTURE Clay	Silt	Sand/ Gravel	Rocky	PARENT MATERIAL Shale	Sandstone
I A/1	x	xx	x	x	-	-	0-35	x	x	-	few,small	x	-
I A/2	x	xx	x	x	-	-	20-45	xx	x	-	few	x	few
I A/3	xx	-	x	x	-	-	0-40	xx	x	-	few	x	-
I A/4	-	-	x	x	-	-	0-55	xx	x	x	-	xx	x
I B	-	-	x	xx	x	-	contoured	x	x	xx	few	x	xx
I C	-	-	x	x	x	-	contoured	x	-	xx	few	-	xx
I D	-	-	x	x	xx	-	contoured	xx	x	x	-	x	xx
I E/1	-	x	-	x	-	-	5-70	-	x	xx	some sh	x	xx
I E/2	-	x	x	x	-	-	0-75	-	x	xx	some sh/ss	x	xx
I E/3	x	-	-	-	x	-	15-55	-	x	x	minor sh	x	x
I E/4	x	x	-	x	xx	-	5-40	-	x	xx	small ss/sh	x	xx
I E/5	x	x	xx	x	-	-	10-25	-	x	-	-	xx	x
I E/6	x	-	xx	x	-	-	rel. flat	-	x	-	-	x	-
I E/7	x	-	x	x	-	-	5-70	x	x	x	-	xx	x
I F	-	-	x	-	x	-	contoured	x	-	xx	-	x	xx
II A	-	x	x	x	-	-	5-50	-	-	x	x	-	x
II B	-	x	-	x	-	-	5-40	-	-	x	x	-	x
II C	-	x	-	x	-	-	30-60	-	-	x	-	-	x
II D/1	-	x	xx	xx	x	-	0-40	x	-	-	-	x	-
II D/2	-	x	x	xx	x	-	15-75	x	-	-	-	x	-
II D/3	-	x	-	x	x	-	5-30	x	-	xx	-	-	x
II E	-	xx	x	x	-	-	10-25	-	-	x	-	-	x
II F	-	x	-	x	-	-	20-30	-	-	x	-	-	x
II G	-	x	xx	x	xx	-	5-45	-	-	x	-	-	x
II H	Information Not Available												
II I	-	x	-	x	-	-	20-30	-	-	x	-	-	x
II J	-	xx	x	xx	x	-	5-20	x	-	-	-	x	-

Table A - 4(b)

Description of Soil Sample Locations In Mined Areas Near Minto And Chipman

	SITE DESCRIPTION			DRAINAGE				SOIL TEXTURE				PARENT MATERIAL	
Sample Number	Bottom of Slope	Middle of Slope	Top of Slope	Good	Mod.	Poor	Slope(c) at Sample Site	Clay	Silt	Sand/ Gravel	Rocky	Shale	Sandstone
II K/1	-	x	-	xx	x	-	15-20	-	-	x	-	-	x
II K/2	-	xx	x	x	-	-	10-60	x	-	xx	-	-	x
II K/3	-	x	x	xx	x	-	10-45	-	-	x	-	-	x
II L	x	xx	-	x	-	-	20-45	x	-	x	-	-	x
II M	-	x	-	x	-	-	15-25	x	-	x	-	-	x
II N	-	x	xx	-	x	-	0-45	x	-	xx	-	-	x
II 0/1	-	x	-	x	-	-	30-55	xxx	-	x	-	xx	x
II 0/2	-	xx	x	x	-	-	15-45	x	-	x	-	-	x
II 0/3	-	x	-	x	-	-	15-45	x	-	xx	-	-	x
II 0/4	x	-	xx	xx	x	-	15-35	xx	-	x	-	xx	x
II 0/5	-	x	x	xx	x	-	20-40	x	-	x	-	-	x
II 0/6	-	x	x	x	-	-	15-50	x	-	x	-	-	x
II 0/7	-	x	-	x	-	-	15-40	x	-	x	-	-	x
II 0/8	-	xx	x	xx	x	-	0-40	x	-	xx	-	-	x
II 0/9	-	x	-	x	-	-	20-35	x	-	x	-	-	x
II 0/10	-	x	xx	x	x	-	0-45	-	-	x	-	-	x
II 0/11	-	x	x	xx	x	x	0-50	x	-	xx	-	-	x
II P	-	xx	x	x	-	-	5-45	x	-	xx	-	-	x
II Q	-	x	-	x	-	-	20-35	x	-	xx	-	-	x
II R	-	x	-	x	-	-	10-30	-	-	x	-	-	x
II S	x	xx	-	x	xx	-	15-35	x	-	x	-	-	x
II T/1	-	-	x	x	xx	-	0-50	x	x	xx	-	x	x
II T/2	-	x	-	x	-	-	0-70	-	-	x	-	-	x
III A	-	x	-	x	-	-	35-45	x	xx	x	-	xx	x
III B	-	x	-	x	-	-	15-35	-	-	x	-	x	x
III C	-	x	-	x	-	-	30-60	-	-	x	-	xx	x
III D	-	x	-	x	-	-	15-60	x	xx	x	-	xx	x

Table A - 4(b)

Description of Soil Sample Locations In Mined Areas Near Minto And Chipman

Sample Number	SITE DESCRIPTION Bottom of Slope	Middle of Slope	Top of Slope	DRAINAGE Good	Mod.	Poor	Slope(°) at Sample Site	SOIL TEXTURE Clay	Silt	Sand/ Gravel	Rocky	PARENT MATERIAL Shale	Sandstone
III E	-	-	x	x	-	-	25-45	-	-	x	-	-	x
III F	-	x	x	x	-	-	40-45	-	-	x	-	-	x
III G	-	xx	x	x	-	-	25-45	x	-	x	-	x	x
III H	-	x	x	x	x	-	30	x	-	-	-	x	-
III I	-	x	x	x	-	-	20-35	x	x	x	-	x	x
III J/1	-	x	-	xx	x	-	15-40	x	-	xx	-	-	x
III J/2	-	x	-	xx	x	-	0-45	x	-	x	-	-	x
III J/3	-	x	-	xx	x	-	5-80	-	-	x	-	-	x
III J/4	-	x	-	xx	x	-	10-30	x	-	xx	-	x	x
III J/5	-	x	-	x	-	-	30-80	x	-	xx	-	x	x
III J/6	-	x	x	x	-	-	15-65	x	x	x	-	x	x
III J/7	-	x	-	x	-	-	20-40	-	-	x	-	-	x
III J/8	-	xx	x	x	-	-	30-65	-	-	x	-	xx	x
III J/9	-	x	-	x	-	-	40-45	-	x	-	-	xx	x
III J/10	-	x	-	xx	x	-	0-15	x	-	xx	-	x	xx
III J/11	-	x	-	x	-	-	15-30	x	-	xx	-	x	x
III K	-	x	-	xx	x	-	5-30	x	-	x	-	x	x
IV A/1	-	x	-	x	-	-	35-70	x	x	x	-	xx	x
IV A/2	-	-	x	x	-	-	0-35	x	x	xx	-	x	x
IV A/3	-	x	x	x	-	-	0-65	x	xx	x	-	x	x
IV B/1	-	x	x	x	-	-	20-80	x	-	xx	-	-	x
IV B/2	-	-	x	xx	x	-	0-5	x	-	xx	-	x	xx
IV B/3	x	xx	-	x	-	-	15-80	x	-	x	-	x	x
IV B/4	-	x	-	x	-	-	0-45	x	x	xx	-	x	x
IV C	-	x	-	x	x	-	5-30	x	-	x	-	-	x
IV D/1	-	x	x	xx	-	x	0-60	-	-	x	-	x	xx
IV D/2	-	x	xx	xx	x	-	0-45	x	x	xx	-	-	x

Table A - 4(b)

Description of Soil Sample Locations In Mined Areas Near Minto And Chipman

Sample Number	SITE DESCRIPTION Bottom of Slope	 Middle of Slope	 Top of Slope	DRAINAGE Good	 Mod.	 Poor	Slope(°) at Sample Site	SOIL TEXTURE Clay	 Silt	 Sand/ Gravel	 Rocky	PARENT MATERIAL Shale	 Sandstone
IV D/3	x	-	x	-	-	-	0-45	-	-	x	-	x	x
IV D/4	-	x	-	x	-	-	0-45	-	x	xx	-	x	xx
IV E/1	-	x	-	x	-	-	0-45	-	x	x	-	x	x
IV E/2	-	-	x	x	-	-	0-80	-	x	-	-	x	-
V A	-	-	x	x	-	-	0-70	-	-	x	-	-	x
V B	-	x	xx	x	-	-	0-75	-	x	xx	-	x	x
V C	-	x	-	x	-	-	10-25	-	-	x	-	x	x
V D	-	x	-	x	-	-	0-40	x	x	xx	-	x	x
V E	-	x	-	x	-	-	20-45	-	-	x	-	x	x
V F	-	x	-	x	-	-	20-35	-	x	xx	-	x	xx
V G	x	x	xx	x	-	-	0-85	-	-	x	-	x	x
V I	-	x	-	x	-	-	5	-	-	x	-	x	x
V J/1	-	x	x	x	-	-	0-15	-	-	x	-	x	x
V J/2	-	x	x	x	-	-	0-50	-	-	x	-	x	x
V J/3	-	x	x	x	-	-	0-75	-	-	x	-	x	x
V K	-	x	-	x	-	-	0-35	-	-	x	-	x	x
V L/1	x	x	-	x	-	-	30-55	-	-	x	-	x	x
V L/2	-	x	x	x	-	-	0-40	-	-	x	-	x	x
V M	x	x	xx	x	x	-	0-65	-	-	x	-	x	x

x - xx represents twice the amount of x

Table A - 5(a)

Summary of Inventory Data for Strip-Mined Areas Near Minto and Chipman

Section Number	Section Name	Land Area (acres)	Pond Area (acres)	Approx. Years of Mining	Area Mined 1976-1984 (acres)	Area Contoured (acres)	Area Replanted (acres)
I A	Eighteen Brook North Mine	695	34	1940-1969; (active)	323	0	374
I B	Eighteen Brook South Mine	110	4	1955-1960; 1971-1982	28	110	0
I C	Wildcat Brook Mine	233	16	1975-1982	233	233	75
I D	Albrights Corner North Mine	99	2	1960; 1974-1982	33	84	17
I E	King Road/Little River Mine	1731	95	1948-1975	0	28	1002
I F	Wuhr's Beach Mine	20	3	1950-1959	0	0	0
I G	Fire Road Mine	31	0	1983-1984; (active)	31	0	0
II A	Hardwood Ridge Heath Mine	150	7	1952-1959	0	150	0
II B	Northside Drive Heath Mine	148	0	1965-1972; (active)	134	32(est.)	0
II C	North Minto Mine	26	2	-	-	0	0
II D	Slope Road/North Minto Mine	522	83	shaft; 1970's	64	40	133
II E	Slope Road Mine	3	0	shaft	0	0	0
II F	Slope Road Mine	7	0	shaft	0	0	0

Table A - 5(a)

Summary of Inventory Data for Strip-Mined Areas Near Minto and Chipman

Section Number	Section Name	Land Area (acres)	Pond Area (acres)	Approx. Years of Mining	Area Mined 1976-1984 (acres)	Area Contoured (acres)	Area Replanted (acres)
II G	Slope Road Mine	10	0	shaft	0	0	0
II H	Hardwood Ridge Mine	38	2	1970-1976	0	38	0
II I	Bairds Hill Mine	74	0	1974	36	74	65
II J	Bairds Hill Mine	8	0	shaft	0	8	0
II K	New England Mine	318	40	1965-1973	0	27	233
II L	New England Mine	6	3	1973	0	0	6
II M	New Avon Mine	12	2	1960's	0	0	0
II N	New Avon Mine	71	22	1960's	0	0	37
II O	Avon Mine	1809	59	1949-1969	0	18	1361
II P	Newcastle Bridge Mine	52	0	1970's	0	30	0
II Q	Newcastle Bridge Mine	44	0	-	-	14	30
II R	Newcastle Centre Mine	37	4	1960-1965	0	0	0
II S	Newcastle Centre Mine	14	0	1960-1965	0	0	0
II T	Newcastle Centre Mine	425	26	1970-1971	0	5	279

Table A - 5(a)

Summary of Inventory Data for Strip-Mined Areas Near Minto and Chipman

Section Number	Section Name	Land Area (acres)	Pond Area (acres)	Approx. Years of Mining	Area Mined 1976-1984 (acres)	Area Contoured (acres)	Area Replanted (acres)
III A	Midland Mine	164	32	1950's	0	0	0
III B	Midland Mine	31	3	1950's	0	0	31
III C	Midland Mine	43	2	1950's	0	0	0
III D	Midland Mine	169	25	1950's	0	0	150
III E	Midland Mine	55	20	1950's	0	0	0
III F	Midland Mine	33	2	1950's	0	0	0
III G	Midland Mine	29	4	1950's	0	0	0
III H	Midland Mine	24	6	1950's	0	0	16
III I	Salmon Harbour Mine	95	8	1955-1959	0	0	44
III J	Salmon Harbour Mine	2064	156	shaft; 1952-1969; 1978-1984(active)	680	252(est.)	318
III K	Salmon Harbour Mine	112	22	1952-1969	0	0	0
IV A	Dufferin Mine	469	25	1937-1946; (active)	38	21	18
IV B	Coal Creek Mine	711	15	1970-1982	259	297(est.)	319

Table A - 5(a)

Summary of Inventory Data for Strip-Mined Areas Near Minto and Chipman

Section Number	Section Name	Land Area (acres)	Pond Area (acres)	Approx. Years of Mining	Area Mined 1976-1984 (acres)	Area Contoured (acres)	Area Replanted (acres)
IV C	Long Creek Mine	51	3	1950	0	0	0
IV D	Salmon Harbour Mine	479	173	1950's	0	0	292
IV E	Moray Point Mine	301	53	1955-1960	0	0	47
V A	Avon Road Mine	97	5	1938-1959	0	0	0
V B	Coal Creek Road Mine	138	8	1938-1959	0	0	0
V C	Avon Road Mine	115	2	1938-1959	15	0	0
V D	Coal Creek Road Mine	109	9	1938-1959	0	0	0
V E	Coal Creek Road Mine	76	10	1938-1959	0	0	0
V F	Coal Creek Road Mine	100	3	1938-1959	0	0	0
V G	Avon Road Mine	267	0	1938-1959; 1977(active)	66	14	0
V H	Coal Creek Road Mine	26	0	1930's	0	0	0
V I	Coal Creek Road Mine	31	0	1940's; 1970-1975	0	22	0
V J	Marshal Road Mine	556	0	1938-1959; 1970's(active)	60	0	79

Table A - 5(a)

Summary of Inventory Data for Strip-Mined Areas
Near Minto and Chipman

Section Number	Section Name	Land Area (acres)	Pond Area (acres)	Approx. Years of Mining	Area Mined 1976-1984 (acres)	Area Contoured (acres)	Area Replanted (acres)
V K	Range Mine	165	1	1938-1959; 1970's	28	0	29
V L	Range Mine	760	8	1938-1959; 1970's	400	408(est.)	45
V M	Salmon River Road Mine	68	0	-	-	20	0
Summary							
Section I		2919	154	-	648	455	1468
Section II		3774	250	-	234	598	2144
Section III		2819	280	-	680	252	559
Section IV		2011	269	-	297	318	676
Section V		2508	46	-	569	464	153
GRAND TOTAL		14031	999		2428	1925	5000

The total area disturbed by strip-mining is 15,030 acres (August,1984).

Table A - 5(b)

Area of Mined Land Forested, With No Tree Life, and "Non-Contoured, Not Planted and Openly Stocked or With No Tree Life"

	Section Name and Number	Land Area	Area Forested	Area With No Tree Life	Area Non-Contoured, Naturally Regenerating, and Openly Stocked or Having No Tree Life
I A	Eighteen Brook North Mine	695	380	315	321
I B	Eighteen Brook South Mine	110	0	110	0
I C	Wildcat Brook Mine	233	75	158	0
I D	Albrights Corner North Mine	99	32	67	15
I E	King Road/Little River Mine	1731	1727	4	446
I F	Wuhr's Beach Mine	20	20	0	20
I G	Fire Road Mine	31	0	31	31
		2919	2234	685	833
II A	Hardwood Ridge Heath Mine	150	0	150	0
II B	Northside Drive Heath Mine	148	36	112	116
II C	North Minto Mine	26	26	0	0
II D	Slope Road/North Minto Mine	522	331	191	349
II E	Slope Road Mine	3	0	3	3
II F	Slope Road Mine	7	0	7	7
II G	Slope Road Mine	10	0	10	10
II H	Hardwood Ridge Mine	38	0	38	0
II I	Bairds Hill Mine	74	74	0	0
II J	Bairds Hill Mine	8	0	8	0
II K	New England Mine	318	304	14	24
II L	New England Mine	6	6	0	0
II M	New Avon Mine	12	12	0	12
II N	New Avon Mine	71	71	0	34
II O	Avon Mine	1809	1689	120	222
II P	Newcastle Bridge Mine	52	52	0	1

Table A - 5(b)

Area of Mined Land Forested, With No Tree Life, and "Non-Contoured, Not Planted and Openly Stocked or With No Tree Life"

	Section Name and Number	Land Area	Area Forested	Area With No Tree Life	Area Non-Contoured, Naturally Regenerating, and Openly Stocked or Having No Tree Life
II Q	Newcastle Bridge Mine	44	44	0	0
II R	Newcastle Centre Mine	37	37	0	37
II S	Newcastle Centre Mine	14	14	0	0
II T	Newcastle Centre Mine	425	425	0	92
		3774	3121	653	907
III A	Midland Mine	164	164	0	77
III B	Midland Mine	31	31	0	0
III C	Midland Mine	43	43	0	43
III D	Midland Mine	169	169	0	13
III E	Midland Mine	55	55	0	55
III F	Midland Mine	33	33	0	0
III G	Midland Mine	29	29	0	0
III H	Midland Mine	24	24	0	8
III I	Salmon Harbour Mine	95	95	0	51
III J	Salmon Harbour Mine	2064	1147	917	1254
III K	Salmon Harbour Mine	112	112	0	58
		2819	1902	917	1559
IV A	Dufferin Mine	469	423	46	329
IV B	Coal Creek Mine	711	338	373	125
IV C	Long Creek Mine	51	51	0	0
IV D	Salmon Harbour Mine	479	479	0	29
IV E	Moray Point Mine	301	301	0	254
		2011	1592	419	737

Table A - 5(b)

Area of Mined Land Forested, With No Tree Life, and "Non-Contoured, Not Planted and Openly Stocked or With No Tree Life"

	Section Name and Number	Land Area	Area Forested	Area With No Tree Life	Area Non-Contoured, Naturally Regenerating, and Openly Stocked or Having No Tree Life
V A	Avon Road Mine	97	97	0	97
V B	Coal Creek Road Mine	138	138	0	138
V C	Avon Road Mine	115	111	4	115
V D	Coal Creek Road Mine	109	109	0	94
V E	Coal Creek Road Mine	76	76	0	63
V F	Coal Creek Road Mine	100	100	0	75
V G	Avon Road Mine	267	185	82	139
V H	Coal Creek Road Mine	26	26	0	0
V I	Coal Creek Road Mine	31	31	0	0
V J	Marshall Road Mine	556	544	12	402
V K	Range Mine	165	75	90	125
V L	Range Mine	760	261	499	251
V M	Salmon Harbour Road Mine	68	48	20	0
		2508	1801	707	1499
TOTAL AREA (acres)		14,031	10,650	3,381	5,535

Table A - 6

Owners of Private Land Disturbed by Strip Mining in the Minto-Chipman Area

Property		Assessment Number	Present Owner	Area (acres)
Section I	- E	01149	Ivan Miller	44.2
	- E	01094	Brian Foulkes	62.7
	- E	01073	Brian Foulkes	50.9
	- E	01073	Brian Foulkes	35.7
	- E	01629	Ashely Colter	15.4
	- E	01074	Lorne Crawford	8.5
			Total Area for Section I	217.4
Section II	- B	51069	Howard Firisch	7.2
	- B	01032	Ralph Betts	8.6
	- B	02095	Clark S. Walker	1.5
	- D	00221	Clem McKeil	24.7
	- H	02011	Bishop Lumber Co.	20.9
	- K	00295	Edward Voutour	2.5
	- K,L	00194	Donald Harding	9.8
	- N	00137	Lionel Girouard	6.4
	- N	00175	Amos J. Legere	0.2
	- N	00021	Edward Legere	6.9
	- O	01008	Avon Enterprises	211.3
	- O	01179	Henry Goguen	10.9
	- O	01217	A. W. Wasson Ltd.	19.1
	- O	01238	Louis DiCarlo	7.2
	- O	01092	Margaret Flower	32.9
	- O	01211	A. W. Wasson Ltd.	8.8
	- O	01133	Kenneth Libby	28.3
	- O	01132	Thelma Libby	42.7

Property		Assessment Number	Present Owner	Area (acres)
Section II	- O	51435	Ivan Miller	10.5
	- O	320318	Eldon Parsons	17.2
	- O	51051	Ernest Wasson	1.5
	- O	320265	Kenneth Parsons	1.2
	- O	320270	Michael Babineau	0.9
	- O,R		Block 9, 10, 11	270.6
	- O,R	01140	Mrs. Shiela Tissington	21.5
	- P	00211	Ivan Miller	7.1
	- P	00324	Roy Yeomans	2.2
	- R	01144	Murray & Inez McMann	11.8
	- R	01143	Clarence McMann	2.6
	- S	01202	E. R. Thurrott	3.2
	- S	01161	Supply & Services	11.5
	- T	01117	Charles Hoyt	9.1
	- T	51116	?	0.2
	- T	51484	Harold Corey	18.4
			Total Area for Section II	839.4
Section III	- A	01724	Sunil Investments Ltd.	23.7
	- A	01724	Sunil Investments Ltd.	26.1
	- A	01079	Bishop Lumber Co.	25.1
	- A	01296	Marguerite Farrell	23.7
	- A	01601	Charles Nichols	50.1
	- A,B	01481	D. W. Mills & R. A. Mills	18.1
	- A,B,C	01112	Robert Boyne	24.9
	- B,C,D,I	01035	D. W. Mills & R. A. Mills	40.1
	- C,D,I	01525	D. W. Mills & R. A. Mills	100.4
	- D	01441	D. W. Mills & R. A. Mills	28.3
	- D	01161	Arnold Copeland	6.5
	- D	01303	Raymond Foss	15.7
	- D	01263	Sunil Investments Ltd.	18.8
	- D,F,I	01525	D. W. Mills & R. A. Mills	37.6

Property		Assessment Number	Present Owner	Area (acres)
Section III	- D,F,H,I	01524	D. W. Mills & R. A. Mills	39.8
	- D,F,H,I,J	01569	John McAllister	109.5
	- E	01756	Alfred & Hattie Young	22.2
	- F,G	01524	Walter Kilfiller	23.7
	- G	01524	D. W. Mills & R. A. Mills	17.0
	- I	01387	August Hunziker	45.8
	- J	01622	Russell Pollock	30.3
	- J	01152	E. McInnis	317.6
	- J	01076	Lorne Crawford	39.5
	- J	51434	Faye J. MacFarlane	30.9
	- J	01018	Angus Miller	31.6
	- J	51058	R. A. Mills	28.4
	- J	?	Probably R. A. Mills	20.7
	- J	01017	R. A. Mills	48.4
	- J	01024	R. A. Mills	12.8
	- J	01034	R. A. Mills	83.9
	- J,K	01523	D. W. Mills & R. A. Mills	117.6
	- K	01588	Grand Lake Development Corp.	16.2
	- K	01556	Marshall Murray	0.7
			Total Area for Section III	1475.7
Section IV	- A	01308	Mrs. Florence Mallory	2.3
	- A	01262	Mrs. Alice Lafferty	13.7
	- A	01265	Philip Lafferty	7.5
	- A	01310	Fred McAllister	26.2
	- A	01022	Hamilton Baird	44.0
	- A	01175	Edward Cullion	31.6
	- A	01020	Yvonne A. Baird	24.0
	- A	01631	Margaret Spencer	0.7
	- A	01019	John Curwin	11.4
	- A	01132	Murray Barton	18.0

Property		Assessment Number	Present Owner	Area (acres)
Section IV	- B	01746	Gordon A. Wilson	39.1
	- B	01064	Merlyn MacDonald	27.3
	- B	01155	Elias Cole Est.	2.4
	- C	01579	Roland McLeod	42.5
	- D	01159	?	177.0
	- D	01527	R. A. Mills	170.3
	- D	01080	Bishop Lumber Co.	22.2
	- E	01340	William Gesner	13.6
	- E	01002	Anestasse Allain	24.2
	- E	01389	Charles H. Miller	16.8
	- E	01526	Patrick C. Mills	32.4
	- E	01526	D. W. Mills & R. A. Mills	89.2
	- E	01526	D. W. Mills & R. A. Mills	110.2
			Total Area for Section IV	946.6
Section V	- A	01298	H. J. Crabbe & Sons Ltd.	161.0
	- B,D	01651	Rutherford Starkey Est.	70.0
	- B	01597	James Miller	13.0
	- B,D	01662	Joseph Miller	13.0
	- C	01045	Bishop Lumber Co.	31.0
	- D	01663	Norman Swift	9.0
	- D,E,F	01519	William Mclean	75.9
	- F	01519	William McLean	15.1
	- F	01022	Bishop Lumber Co.	52.0
	- F,H	01495	Kenneth Leckey	19.2
	- G	01557	H. J. Crabbe & Sons Ltd.	2.2
	- G	01281	J. D. Irving	154.0
	- G	01276	Glendon Leckey	40.8
	- I	01388	Charles Miller	14.2
	- I	01494	Phyllis Marshall	4.6
	- I	01493	Stanley Leckey	10.1
	- I	01390	Mrs. Arthur Hawkes	2.5

Property		Assessment Number	Present Owner	Area (acres)
Section V	- J	01276	Glendon Leckey	84.8
	- J	01037	Murray Barton	61.8
	- J	01275	Glendon & Mildred Leckey	73.8
	- J	01036	Lena Ann Barton	17.0
	- J	01313	Gerald Hetherington	32.3
	- J	01310	John McNamara Est.	35.0
	- J	01299	Roland McLeod	9.6
	- J	01279	Percy Leckey	93.6
	- J	01220	Gilbert Legere	8.1
	- J	01296	Wallace McIllroy	1.8
	- K,L	01509	Oscar Richardson	18.3
	- L	01047	Edmond Blacquier	19.9
	- L	01321	Lloyd Boutilier	19.8
	- L	01216	Frank Hawkes	87.8
	- L	01305	Juston McLean	45.3
	- L	01163	Garnet Flewelling	33.4
	- L	01304	Ivory McLean	1.5
	- L	01221	Gary Huthchins	36.3
	- L	01156	Alvin Fairweather	5.4
	- L	01048	Milton Branscombe	18.2
	- L	01378	Randall Nason	21.7
			Total Area for Section V	1473.3
			Total Area	4952.4

Note: Properties inside village limits, and properties belonging to N. B. Coal Ltd. and the Crown are not included in this table. Information contained herein was transferred from 1972-1981 assessment maps as recorded. More recent data is available from the Assessment Branch of the Department of Municipal Affairs.

Table B - 1 (a)
Ground Cover Vegetation* Species List for Mine Sites in the Minto-Chipman Area

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 1 (10-15% Vegetated)		
I A	1	Horsetail	38.5	rare	
		Bracken fern	32.1	rare	
		Common raspberry	25.6	frequent	
		Mouse-ear hawkweed	2.6	occasional	
		Winter cress	1.3	rare	
			Transect 2 (10-15% Vegetated)		
I A	4	Panic grass	49.8	abundant	
		Horse tail	23.3	rare	
		Pearly everlasting	16.6	rare	
		Common raspberry	5.0	rare	
		Rush A	5.0	rare	
		Mouse-ear hawkweed	.3	rare	
			Transect 3 (10-15% Vegetated)		
I A	7	Bracken fern	24.2	frequent	
		Bunchberry	21.2	occasional	
		Pearly everlasting	18.2	abundant	
		Panic grass	9.1	frequent	
		Low sweet blueberry	6.1	rare	
		Sheep laurel	6.1	rare	
		Bristly sarsaparilla	6.1	rare	
		Mouse-ear hawkweed	4.5	occasional	
		Common raspberry	3.0	rare	
		Smoothish hawkweed	1.5	rare	
			Transect 4 (10-15% Vegetated)		
I A	9	Horsetail	32.4	occasional	
		Smoothish hawkweed	16.2	abundant	
		Mouse-ear hawkweed	16.2	abundant	
		Golden rod	12.9	abundant	
		Pearly everlasting	12.1	occasional	
		Common raspberry	4.8	occasional	

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Ox eye daisy	4.0	occasional	
		Common dandelion	1.3	rare	
			Transect 5 (20-25% Vegetated)		
I A	11	Pearly everlasting	33.4	frequent	
		Horsetail	22.3	occasional	
		Common raspberry	22.3	frequent	
		Mouse-ear hawkweed	12.3	frequent	
		Coltsfoot	3.3	occasional	
		Common tansy	2.2	occasional	
		Smoothish hawkweed	1.8	occasional	
		Bird's eye speedwell	1.1	rare	
		Curled dock	1.1	rare	
			Transect 6 (15-20% Vegetated)		
I A	13 & 14	Unidentified grass	33.4	abundant	
		Mouse-ear hawkweed	18.2	abundant	
		Smoothish hawkweed	18.2	abundant	
		Coltsfoot	15.7	frequent	
		Fireweed	6.1	frequent	
		Pearly everlasting	3.2	frequent	
		Common raspberry	2.6	frequent	
		Mint	1.2	occasional	
		Reed canary grass	1.2	occasional	
		Cow or tufted vetch	0.1	rare	
	12 & 13	Orange hawkweed	0.1	rare	
			Transect 7 (15-20% Vegetated)		
I-A	17	Common raspberry	29.8	occasional	
		Smoothish hawkweed	16.8	abundant	
		Mouse-ear hawkweed	16.8	abundant	
		Coltsfoot	14.9	occasional	
		Horsetail	7.4	occasional	
		Pearly everlasting	7.4	occasional	
		Kentucky blue grass	3.3	rare	
		Bristly sarsaparilla	1.9	rare	
		Fireweed	0.7	rare	
		Climbing false buckwheat	0.7	rare	

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 8 (5-10% Vegetated)		
I A	18	Yarrow	68.9	abundant	
		Pearly everlasting	18.4	abundant	
		Common Raspberry	7.8	frequent	
		Smoothish hawkweed	1.6	frequent	
		Mouse-ear hawkweed	1.6	frequent	
		Sedge A	.46	occasional	
		Fireweed	.46	occasional	
		Reed canary grass	.32	occasional	
		Rush A	.32	occasional	
		Bristly sarsparilla	.2	rare	
			Transect 9 (10-15% Vegetated)		
I A	38	Tufted hair grass	48.3	common	
		Pearly everlasting	33.8	abundant	
		Red clover	7.7	rare	
		Smoothish hawkweed	2.4	abundant	
		Mouse-ear hawkweed	2.0	frequent	
		Coltsfoot	2.0	occasional	
		Blue flag iris	2.0	rare	
		Ox eye daisy	1.0	rare	
		Cinquefoil	0.8	rare	
			Transect 10 (0-5% Vegetated)		
I A	49	Horsetail	30.4	abundant	
		Canada blue grass	23.6	abundant	
		Mouse-ear hawkweed	13.5	abundant	
		Pearly everlasting	10.8	abundant	
		Smoothish hawkweed	6.7	frequent	
		Ox eye daisy	4.3	frequent	
		Coltsfoot	4.0	frequent	
		Old field cinquefoil	3.7	occasional	
		Common raspberry	1.0	occasional	
		Cow Vetch	0.7	rare	
		Bristly sarsaparilla	0.7	rare	
		Bracken fern	0.5	rare	

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 11 (10-15% Vegetated)		
I A	57	Kentucky blue grass	47.1	common	
		Horsetail	43.4	occasional	
		Smoothish hawkweed	6.0	frequent	
		Shinleaf	1.5	rare, found once	
		Pearly everlasting	0.8	rare	
		Unidentified grass	0.6	rare	
		Common dandelion	0.5	rare	
			Transect 12 (10-15% Vegetated)		
I A	81	Horsetail	39.5	abundant	
		Smoothish hawkweed	17.1	common	
		Mouse-ear hawkweed	15.5	common	
		Golden rod	11.3	frequent	
		Pearly everlasting	7.1	occasional	
		Bluegrass	4.1	occasional	
		Foxtail grass	2.2	occasional	
		Common raspberry	1.3	rare	
		Common tansy	1.4	rare	
			Transect 13 (0-5% Vegetated)		
I B	83	Old field cinquefoil	30.6	abundant	
		Wild strawberry	20.4	abundant	
		Ox eye daisy	15.3	abundant	
		Caraway	6.1	abundant	
		Common Raspberry	6.1	abundant	
		Golden rod	5.1	abundant	
		Horsetail	5.1	abundant	
		Sweet fern	3.0	frequent	
		Sedge B	2.0	frequent	
		Twinflower	1.5	occasional	
		Smoothish hawkweed	1.0	occasional	
		Blackberry	1.0	occasional	
		Blue-eyed grass	1.0	occasional	

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Climbing false buckwheat	0.5	occasional	
		Cow vetch	0.5	rare	
		American brooklime	0.2	rare	
		White clover	0.2	rare	
			Transect 14 (0-5% Vegetated)		
I C	92	Sedge C	35.0	abundant	
		Bristly sarsaparilla	31.5	abundant	
		Coltsfoot	4.0	abundant	
		Smoothish hawkweed	6.7	frequent	
		Curled dock	2.6	occasional	
		Fireweed	2.4	occasional	
		Kentucky blue grass	0.8	occasional	
		Sweet fern	0.7	occasional	
		Mouse-ear hawkweed	0.7	occasional	
			Transect 15 (0-5% Vegetated)		
I C	96	Coltsfoot	56.2	common	
		Horsetail	11.8	occasional	
		Sedge B	8.9	occasional	
		Kentucky blue grass	8.9	occasional	
		Fireweed	8.3	occasional	
		Smoothish hawkweed	3.0	occasional	
		Pearly everlasting	1.8	rare	
		Hawk's-beard	0.6	rare	
		Sedge A	0.6	rare	
			Transect 16 (0-5% Vegetated)		
I C	98	Sedge B	31.4	frequent	
		Stinking Willie ragwort	15.7	frequent	
		Sheep laurel	13.1	frequent	
		Fireweed	10.5	frequent	
		Coltsfoot	7.9	occasional	
		Sedge D	6.3	occasional	
		Bristly sarsaparilla	5.2	occasional	
		Mouse-ear hawkweed	2.6	occasional	
		Low sweet blueberry	2.6	occasional	
		Labrador tea	2.6	occasional	

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Sweet fern	1.6	rare	
			Transect 17 (0-5% Vegetated)		
I D	99	Kentucky blue grass	86.2	occasional	
		Bracken fern	7.0	rare	
		Old field cinquefoil	3.4	rare	
		Sheep sorrel	3.4	rare	
			Transect 18 (0-5% Vegetated)		
I D	100	Fireweed	36.0	frequent-abundant	
		Stinking Willie ragwort	31.5	frequent-abundant	
		Kentucky blue grass	13.5	occasional	
		Sedge B	9.0	occasional	
		Golden rod	9.0	occasional	
		Bristly sarsparilla	1.0	rare	
			Transect 19 (5-10% Vegetated)		
I D	104	Sedge B	57.8	common	
		Stinking Willie ragwort	13.4	abundant	
		Canada blue grass	5.1	frequent	
		Yellow loosestrife	4.1	frequent	
		Kentucky blue grass	3.6	frequent	
		Smoothish hawkweed	2.5	occasional	
		Wild strawberry	2.6	occasional	
		Old field cinquefoil	2.0	occasional	
		Bristly sarsparilla	2.0	occasional	
		Sweet fern	1.7	occasional	
		Mouse-ear hawkweed	1.5	occasional	
		Pearly everlasting	1.0	occasional	
		Bracken fern	1.0	occasional	
		Fireweed	0.4	rare	
		Sheep laurel	0.2	rare	
		Blackberry	0.1	rare	
		Blueberry	0.1	rare	
		Wild lettuce	0.1	rare	
		Old witch grass	0.1	rare	

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 20 (80-85% Vegetated)		
I D	105	Golden Rod	32.8	abundant, mostly near eastern shore of pond 105	
		Labrador tea	24.6	abundant, associated with the forest	
		Sedge D	12.3	common, near water	
		Yellow loosestrife	11.5	abundant	
		Rush A	9.8	abundant, near shore	
		Kentucky blue grass	2.5	occasional	
		Bristly sarsaparilla	2.5	occasional	
		Sedge B	1.6	occasional	
		Blackberry	1.0	rare	
		Rush B	0.6	rare	
		Pearly everlasting	0.6	rare	
			Transect 21 (60-65% Vegetated)		
I D	107	Golden rod	83.3	abundant	
		Sweet fern	9.4	occasional	
		Bunchberry	6.3	occasional	
		Ox eye daisy	1.0	rare	
			Transect 22 (10-15% Vegetated)		
I E	114 and 115	Fowl-meadow grass	67.6	abundant	dry slope, flat spoils
		Stinking Willie ragwort	12.3	abundant	dry slope
		Yellow sweet clover	3.4	abundant	moist flat spoils
		Cow vetch	3.4	abundant	dry roadside
		Ox eye daisy	2.7	frequent	dry slope
		Rough cinquefoil	2.7	frequent	dry slope
		Yarrow	2.2	frequent	dry roadside
		Smoothish hawkweed	1.6	frequent	dry roadside
		Red clover	1.2	frequent	dry flat spoils
		Sweet fern	0.7	frequent	moist flat spoils
		Golden rod	0.5	occasional	dry slope
		Mouse-ear hawkweed	0.3	occasional	dry slope
		Common grass	0.3	occasional	dry flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Wild strawberry	0.3	occasional	dry, flat ground
		Sedge B	0.2	occasional	dry slopes
		Sedge D	0.2	occasional	wet flat spoils
		Bristly sarsaparilla	0.1	occasional	dry slope
		Alsike clover	0.1	occasional	dry slope
		Blackberry	0.1	occasional	dry slope
		Coltsfoot	0.1	rare	dry slope
		Sedge E	0.03	rare	dry flat spoils
		Sedge A	0.03	rare	dry flat spoils
		Rush C	0.03	rare	moist pond shore
		Transect 23 (10-15% Vegetated)			
I E	120	Tickle grass	58.9	common	dry flat spoils, dry spoil slope
		Wild strawberry	13.2	occasional	dry flat spoils
		Horsetail	5.9	occasional	dry slope
		Coltsfoot	3.5	frequent	dry flat spoils, dry spoil slope
		Common dandelion	2.9	frequent	dry flat spoils
		Mouse-ear hawkweed	2.1	frequent	dry flat spoils
		Smoothish hawkweed	1.9	frequent	dry flat spoils
		Bristly sarsparilla	1.8	occasional	dry flat spoils
		Golden rod	1.8	occasional	dry flat spoils
		Welted thistle	1.8	occasional	dry flat spoils
		Rough cinqfoil	1.5	occasional	dry slope, flat spoils (associated with sweet fern)
		Sweet fern	1.5	occasional	dry flat spoils
		Fireweed	1.5	occasional	dry flat spoils
		Pearly everlasting	1.2	occasional	dry flat spoils
		Sedge B	0.6	rare	dry flat spoils
		Wild lettuce	0.1	rare	dry flat spoils
		Transect 24 (70-75% Vegetated)			
I E	137	Yellow sweet clover	28.5	common	dry spoil slope
		Coltsfoot	14.3	common	dry spoil slope (associated with yellow sweet clover)

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Canada blue grass	10.2	occasional	dry roadside
		Horsetail	7.7	abundant	wet flat spoils
		Smoothish hawkweed	7.6	abundant	dry spoil slope, flat spoils roadside
		Wild strawberry	6.6	frequent	dry spoil slope, dry roadside
		Sedge E	5.1	rare	wet flat spoils
		Mouse-ear hawkweed	5.1	frequent	found on dry spoil slope
		White clover	4.6	occasional	dry roadside
		Wire grass	1.6	occasional	dry spoil slope
		Common plantain	1.0	occasional	dry roadside
		Golden rod	1.0	occasional	dry spoil slope
		Fireweed	1.0	occasional	dry spoil slope
		Common timothy grass	1.0	occasional	dry roadside
		Tickle grass	1.0	rare	dry spoil slope
		Red clover	0.1	rare	dry roadside
		Sedge F	0.1	rare	wet flat spoils
		Sedge B	0.1	rare	dry slope
			Transect 25 (95-100% Vegetated)		
I E	178	Downy golden rod	31.4	common	moist shaded flat spoils
		Sweet fern	15.7	abundant	dry roadside
		Golden rod	11.0	frequent	wet roadside
		Common cattail	9.4	occasional	wet pond shore
		Curled dock	6.3	occasional	moist flat area
		Bracken fern	6.3	frequent	moist shaded flat spoils
		Bunchberry	4.4	occasional	moist shaded flat spoils
		Horsetail	3.1	occasional	wet shoreline
		Common hawkweed	3.1	occasional	wet shoreline
		Blackberry	3.1	occasional	moist shaded flat spoils
		American honeysuckle	3.1	occasional	moist shaded flat spoils
		Wild sarsaparilla	1.6	rare	moist shaded flat spoils
		Bristly sarsaparilla	0.9	rare	dry spoil slope
		Yellow loosestrife	0.3	rare	dry roadside
			Transect 26 (30-35% Vegetated)		
I E	180	Canada blue grass	28.7	frequent	dry roadside
		Mouse-ear hawkweed	17.2	frequent	dry spoils
		Wild strawberry	17.2	frequent	dry spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Smoothish hawkweed	17.2	frequent	dry spoils
		Common timothy grass	11.5	occasional	dry spoil slope, roadside
		American honeysuckle	6.9	occasional	moist shaded spoil slope
		White clover	1.1	rare	dry roadside
			Transect 27 (80-85% Vegetated)		
I E	205 (west end)	Horsetail	31.8	common	moist flat spoils
		Common timothy grass	22.3	abundant	dry spoils
		Birdsfoot trefoil	15.9	abundant	dry spoils
		Golden rod	9.5	abundant	dry flat spoils
		Wild strawberry	7.0	frequent	dry flat spoils
		White clover	4.8	frequent	dry flat spoils
		Common hawkweed	4.8	frequent	dry flat spoils
		Fowl-meadow grass	1.6	occasional	dry flat spoils
		Smoothish hawkweed	0.6	occasional	dry flat spoils
		Mouse-ear hawkweed	0.6	rare	dry flat spoils
		Blackberry	0.6	occasional	flat spoils
		Cow vetch	0.5	occasional	dry flat spoils, dry roadside
			Transect 28 (80-85% Vegetated)		
I E	205 (east	Timothy grass	39.4	common	dry flat spoils (forming a
		Birdsfoot trefoil	39.4	common	field of hay
					dry slope, flat area
	end)	Lily of the valley	7.9	common	moist shaded spoil slope
		Bunchberry	4.4	common	moist shaded spoil slope
		Wild sarsparilla	2.9	frequent	moist shaded flat spoil
		Red clover	1.9	occasional	dry spoil slope
		Horsetail	1.0	occasional	wet shoreline
		Pearly everlasting	1.0	occasional	dry flat spoils
		Wild strawberry	1.0	occasional	moist shaded flat spoils
		Sweet fern	0.8	rare	dry shaded flat spoils
			Transect 29 (50-55% Vegetated)		
I E	206	Common timothy grass	54.2	common	dry pond slope, dry roadside
		Fowl-meadow grass	27.1	common	dry pond slope, dry roadside
		Birdsfoot trefoil	16.8	common	along dry roadside
		White clover	1.4	occasional	dry roadside, dry spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Bladder campion	0.3	rare	dry flat spoils
		Smoothish hawkweed	0.3	rare	dry spoil slope
			Transect 30 (10-15% Vegetated)		
I E	208, 209 and 210	Sheep sorrel	17.0	abundant	dry flat spoils
		Horsetail	15.7	abundant	dry shore slope
		Birdsfoot trefoil	13.6	abundant	dry slope, flat spoils
		White clover	13.6	abundant	dry roadside
		Coltsfoot	10.2	abundant	dry slope
		Cow vetch	6.8	frequent	dry roadside, spoil slope
		Smoothish hawkweed	6.8	frequent	dry flat spoils, slope also
		Wire grass	6.8	frequent	dry slope
		Red top grass	2.0	occasional	dry slope
		Common timothy grass	1.7	occasional	dry roadside, spoil slope
		Blackberry	1.7	rare	dry pond slope
		Yarrow	1.0	rare	dry roadside
		Red clover	1.0	rare	dry spoils
		Curled dock	0.7	rare	wet shoreline
		Pearly everlasting	0.7	rare	dry slope
		Common plantain	0.4	rare	dry roadbed
		Sedge B	0.2	rare	dry slope
			Transect 31 (40-45% Vegetated)		
I E	211	Common timothy grass	66.7	common	dry flat spoils (forming hay-field
		Common Raspberry	17.4	frequent	dry spoil slope
		Birdsfoot trefoil	8.7	abundant	dry roadside, dry flat spoils
		Fowl-meadow grass	2.9	frequent	dry flat spoils (associated with Common timothy grass)
		Bracken fern	2.3	occasional	dry shaded spoil slope
		Vetch	0.7	occasional	dry spoil slope, flat slope
		Golden rod	0.6	occasional	dry flat spoils
		Bladder campion	0.3	rare	dry flat spoils
		Blackberry	0.3	rare	dry spoil slope
		Curled dock	0.03	rare	moist spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 32 (60-65% Vegetated)		
I E	215	Horsetail	69.2	common	moist shaded flat spoils
		Sweet fern	7.9	frequent	moist roadside
		Golden rods	5.9	frequent	dry flat spoils
		Pearly everlasting	3.9	occasional	dry shaded roadside
		Smoothish hawkweed	2.9	frequent	dry flat spoils
		Alsike clover	2.0	occasional	dry flat spoils
		Common timothy grass	2.0	occasional	dry flat roadside
		Burdock	2.0	rare	dry spoil slope
		Hop clover	1.2	rare	dry flat spoils
		Mouse-ear hawkweed	1.0	occasional	dry flat spoils
		Wild strawberry	1.0	occasional	dry roadside
		Blackberry	0.4	rare	moist flat spoils
		Welted thistle	0.4	rare	dry roadside
		Wild lily-of-the-valley	0.2	rare	moist shaded spoil slope
			Transect 33 (10-15% Vegetated)		
I E	217	Sweet fern	68.3	common	dry spoil slope
		American honeysuckle	16.4	abundant	moist shaded slope
		Smoothish hawkweed	8.2	abundant	dry spoil slope
		Panicled hawkweed	2.7	rare	dry spoil slope
		Calico aster	2.7	rare	dry spoil slope
		Mouse-ear hawkweed	1.6	rare	dry spoil slope
			Transect 34 (30-35% Vegetated)		
I E	228	Pescue-grass	44.6	abundant	dry spoil slope
		Alsike clover	26.8	abundant	dry spoil slope
		Canada blue grass	17.9	abundant	moist pond shore, dry pond slope
		Smoothish hawkweed	2.9	frequent	dry spoil slope
		Golden rod	2.5	frequent	dry roadside
		Calico aster	1.6	frequent	dry spoil slope
		Tickle grass	1.3	frequent	dry spoil slope
		Yellow sweet clover	.7	occasional	dry pond slope
		Pearly everlasting	.7	occasional	open, moist shaded flat spoils
		Red clover	.5	occasional	dry slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Ox eye daisy	.3	occasional	dry roadbed
		Birdsfoot trefoil	.2	occasional	dry spoil slope
		Common plantain	.2	occasional	dry roadbed
		Welted thistle	.2	occasional	dry roadside
		Bristly sarsaparilla	.1	rare	dry roadbed
			Transect 35 (30-35% Vegetated)		
I E	237	American honeysuckle	21.2	abundant	moist shaded spoil slope
		Downy golden rod	15.2	abundant	dry flat spoils
		Smoothish hawkweed	15.2	abundant	dry flat spoils
		Sweet fern	12.1	frequent	dry spoil slope
		Tickle grass	12.1	frequent	dry roadside
		Bristly sarsaparilla	6.1	occasional	wet flat spoils
		Pearly everlasting	6.1	occasional	wet flat spoils
		Sedge D	2.4	occasional	wet flat spoils
		Sedge B	2.4	occasional	dry roadside
		Blackberry	2.4	occasional	moist shaded roadside
		Wild sarsaparilla	2.4	occasional	moist shaded roadside
		Common plantain	0.6	rare	dry roadside
		Sedge G	0.6	rare	wet pond shore
		Rush A	0.6	rare	wet pond shore
		Red top grass	0.6	rare	moist pond slope
			Transect 36 (0-5% Vegetated)		
I E	247	Sweet fern	83.3	frequent	dry spoil slope
		Common raspberry	8.3	occasional	dry spoil slope
		Smoothish hawkweed	8.3	occasional	dry spoil slope
		Sheep laurel	4.2	rare	dry shaded spoil slope
		Blueberry	4.2	rare	dry shaded spoil slope
			Transect 37 (20-25% Vegetated)		
I E	270	Coltsfoot	37.7	abundant	dry pond slope
		Pearly everlasting	18.9	abundant	dry spoil slope, dry flat spoils
		Blue flag iris	18.9	frequent	wet pond shore
		Grass A	7.5	frequent	dry spoil slope, flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Sweet fern	7.5	occasional	dry spoil slope
		Sedge B	7.5	occasional	dry flat spoils
		Downy golden rod	1.9	rare	dry flat spoils
			Transect 38 (95-100% Vegetated)		
I E	272	Dewberry	29.4	occasional	moist shaded flat spoils
		Shinleaf	17.6	abundant	moist shaded flat spoils
		Wild strawberry	14.7	occasional	moist flat spoils
		Partridge berry	11.8	occasional	moist shaded flat spoils
		Sheep laurel	7.4	occasional	moist shaded spoil slope
		Wild sarsaparilla	7.1	frequent	moist shaded flat spoils
		Round leaved pyrola	2.9	occasional	moist shaded flat spoils
		Bunchberry	2.9	occasional	moist shaded flat spoils
		Blackberry	1.5	occasional	dry flat spoils
		Panicled hawkweed	1.5	occasional	dry flat spoils
		Wild lily-of-the-valley	1.5	occasional	moist shaded flat spoils
		Star flower	1.2	occasional	moist shaded flat spoils
		Sweet fern	0.5	rare	dry flat spoils
			Transect 39 (60-65% Vegetated)		
I E	295	Sweet fern	18.4	frequent	dry slope
		Smoothish hawkweed	15.3	frequent	dry flat spoils, slope also
		Pearly everlasting	12.3	frequent	dry flat spoils
		Downy golden rod	8.5	frequent	dry flat spoils
		Mouse-ear hawkweed	6.1	frequent	dry flat area
		Bristly sarsaparilla	6.1	frequent	dry flat spoils
		Field pussy's-toes	6.1	frequent	dry flat spoils, slope also
		Bluejoint grass	6.1	frequent	dry flat spoils
		Rough cinquefoil	3.7	occasional	dry flat spoils
		Common timothy grass	3.1	occasional	roadside, dry slope
		Red top grass	3.1	occasional	moist roadside
		Wire grass	2.5	occasional	dry flat spoils
		Lance-leaved golden rod	2.5	occasional	wet flat spoils
		Rush A	1.8	rare	wet flat spoils
		Sedge D	1.2	rare	wet flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Yarrow	1.2	rare	dry roadside
		Calico aster	0.6	rare	dry flat spoils
		Leathery grape fern	0.6	rare	dry shaded slope
		Cow wheat	0.6	rare	dry shaded spoil slope
			Transect 40 (40-45% Vegetated)		
I E	296	Downy golden rod	65.3	abundant	dry spoil slope
		Bracken fern	10.4	frequent	dry spoil slope
		American honeysuckle	8.9	frequent	moist shaded spoil slope
		Kentucky blue grass	5.2	frequent	dry spoil slope
		Common hawkweed	3.6	occasional	dry spoil slope
		Shinleaf	2.6	occasional	dry shaded spoil slope
		Wire grass	2.6	occasional	dry spoil slope
		Blackberry	1.3	occasional	moist shaded spoil slope
			Transect 41 (50-55% Vegetated)		
I E	299	Smoothish hawkweed	40.5	common	dry spoil slope, flat spoils
		Mouse-ear hawkweed	31.8	common	dry spoil slope, flat spoils
		Bristly sarsaparilla	5.4	frequent	dry spoils
		Pearly everlasting	6.4	frequent	dry spoils
		American honeysuckle	3.2	frequent	moist shaded spoils
		Downy golden rod	2.7	frequent	dry flat spoils
		Kentucky blue grass	1.9	occasional	dry spoil slope
		Shinleaf	1.6	occasional	dry shaded spoil slope
		Wild strawberry	1.6	occasional	moist shaded flat spoils
		Fireweed	1.6	occasional	dry spoil slope
		Common timothy grass	0.8	occasional	dry flat spoils
		Canada blue grass	0.8	occasional	dry flat spoils
		Sedge H	0.8	occasional	dry flat spoils
		Common dandelion	0.3	rare	dry flat spoils
		Rough cinquefoil	0.2	rare	dry flat spoils
		Common raspberry	0.2	rare	dry flat spoils
		Calico aster	0.2	rare	dry flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 42 (70-75% Vegetated)		
I E	300	Alsike clover	33.0	abundant	dry flat spoils
		King devil hawkweed	28.9	abundant	open, dry flat spoils
		Yarrow	7.0	abundant	dry and moist flat spoils
		Common timothy grass	4.9	abundant	dry flat spoils, dry roadside
		Common dandelion	4.9	abundant	dry slope, dry flat spoils
		Red top grass	4.1	abundant	dry spoils
		Cow vetch	3.7	abundant	dry flat spoils (and climbing jackpine tree)
		Golden rod	3.7	abundant	dry flat spoils, dry roadside
		Common raspberry	2.9	frequent	dry flat spoils
		Red clover	2.1	frequent	open dry spoils
		Rough hawkweed	2.1	frequent	dry flat spoils
		Ox eye daisy	1.2	occasional	dry flat spoils
		Pearly everlasting	1.2	occasional	dry spoils
		Rough cinquefoil	.08	rare	dry flat spoils
			Transect 43 (80-85% Vegetated)		
I F	304	Bunchberry	34.2	frequent	dry flat spoils
		Alsike clover	13.2	frequent	dry flat spoils
		Sheep laurel	13.2	frequent	dry spoil slope
		Horsetail	10.5	frequent	dry flat spoils
		Bracken fern	9.2	frequent	moist shaded flat spoils, pond slope
		Red clover	5.3	occasional	dry flat spoils
		Wild sarsaparilla	5.3	frequent	moist shaded flat spoils
		Yarrow	4.2	occasional	dry flat spoils
		Ground pine	1.6	rare	moist shaded flat spoils
		Smoothish hawkweed	1.3	rare	dry flat spoils
		Wild lily-of-the-valley	1.0	rare	moist shaded flat spoils
		Cow wheat	1.0	rare	moist shaded pond slope
			Transect 44 (75-80% Vegetated)		
I F	303	Sedge D	24.8	abundant	wet flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Sweet fern	12.0	abundant	dry flat spoils, dry spoil slope
		Hop clover	12.0	abundant	moist flat spoils
		White clover	10.5	occasional	dry flat spoils
		Cow vetch	8.9	abundant	dry spoil slope
		Horsetail	8.9	occasional	wet spoil slope
		Bristly sarsaparilla	7.5	occasional	dry spoil slope
		Rush A	7.5	occasional	wet flat spoils
		Fireweed	4.5	occasional	dry spoil slope
		Rush B	1.5	rare	wet flat spoils
		American honeysuckle	1.5	rare	dry spoil slope
		Wire grass	0.3	rare	dry spoil slope
		Transect 45 (70-75% Vegetated)			
I F	305	Horsetail	34.7	occasional	moist pond slope, pond shore
		White clover	29.1	rare	dry spoil slope
		Boulder fern	20.8	rare	moist shaded flat spoils
		Bunchberry	2.8	occasional	moist shaded flat spoils
		Yarrow	2.8	frequent	dry spoil slope
		Bristly sarsaparilla	2.4	frequent	dry spoil slope
		Sweet fern	1.7	occasional	dry spoil slope
		Wild lily-of-the-valley	1.7	rare	moist shaded flat spoils
		Fireweed	1.0	occasional	dry spoil slope
		Sedge B	0.7	occasional	dry spoil slope, moist roadside
		Wire grass	0.5	occasional	dry spoil slope, moist roadside
		Boneset	0.4	rare	wet flat spoils
		Low hop clover	0.3	rare	dry spoil slope, near roadside
		Blackberry	0.3	rare	dry roadside
		Interrupted fern	0.3	rare	wet shaded pond shore
		Sedge I	0.3	rare	wet flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 46 (0-5% Vegetated)		
II A		Hairgrass	34.9	frequent	dry roadside, flat rocky spoil slope
		White birch	14.0	occasional	dry rocky spoil slope, flat area
		Sedge B	11.6	occasional	dry rocky spoil slope, flat area
		Pearly everlasting	9.3	occasional	dry rocky spoil slope, flat area
		Wire grass	7.0	occasional	dry rocky flat spoils
		Stinking Willie ragwort	7.0	occasional	dry rocky spoil slope
		Lance-leaved golden rod	7.0	occasional	flat rocky spoils
		Common elderberry	4.7	rare	dry flat rocky spoils
		Common raspberry	2.3	rare	dry rocky spoil slope
		Bristly sarsaparilla	2.3	rare	dry rocky spoil slope
			Transect 47 (10-15% Vegetated)		
II B	308	Evening primrose	40.4	abundant	dry rocky slope and roadside
		Stinking Willie ragwort	28.1	abundant	dry rocky slope and roadside
		Downy golden rod	6.1	occasional	dry rocky slope and roadside
		Cow vetch	6.1	occasional	dry rocky slope
		Grass A	5.3	occasional	dry rocky slope and roadside
		Hairgrass	4.4	occasional	dry rocky roadside
		Sedge H	1.8	occasional	dry rocky roadside
		Mouse-ear hawkweed	1.8	rare	dry rocky roadside
		Rough cinquefoil	1.8	occasional	dry rocky slope
		Gray birch	1.8	occasional	dry rocky slope
		King devil hawkweed	0.9	rare	dry rocky slope
		Common raspberry	0.9	rare	dry rocky slope
		Balsam poplar	0.9	rare	dry rocky slope
			Transect 48 (0-5% Vegetated)		
II C	309	Sedge D	35.6	abundant	muddy brookside, wet depression
		Gray birch	20.7	abundant	spoil slope, flat area
		Field mint	19.5	frequent	muddy brookside, wet depression

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Lance-leaved golden rod	9.2	frequent	spoil slope, flat spoils
		Downy golden rod	6.9	occasional	flat spoils
		Trembling aspen	2.3	occasional	spoil slope
		Large tooth aspen	2.3	occasional	spoil slope
		Heart-leaved willow	2.3	occasional	moist spoil slope
		White birch	1.2	rare	moist spoil slope
		Transect 49 (40-45% Vegetated)			
II D	319	Smoothish hawkweed	17.0	occasional	dry flat spoil pile
		Grass A	16.3	frequent	dry roadside
		Downy golden rod	12.9	abundant	dry roadside
		White birch	9.5	abundant	dry flat spoils
		Panicled hawkweed	7.5	frequent	dry spoil slope
		Canada blue grass	6.8	rare	dry roadside
		Common raspberry	5.4	occasional	dry roadside
		Hairgrass	4.8	rare	dry roadside
		Gray birch	4.8	frequent	dry roadside
		Lance-leaved golden rod	3.4	rare	dry roadside
		Sedge B	2.7	rare	dry roadside
		Red top grass	2.0	occasional	dry roadside
		Black locust	2.0	occasional	dry flat spoils
		Aster	1.4	occasional	dry roadside
		Hardhack	0.7	rare	dry roadside
		Trembling aspen	0.7	rare	dry flat spoils
		Large tooth aspen	0.7	rare	dry flat spoils
		Green adder's-mouth	0.7	rare	shaded, dry flat spoils
		White pine	0.7	rare	shaded, dry flat spoils
		Transect 50 (0-5% Vegetated)			
II D	311	Horsetail	24.8	frequent	moist, exposed shoreline, and dry rocky pond slope
		Stinking Willie ragwort	15.0	frequent	shoreline; moist, exposed
		Coltsfoot	10.6	occasional	pond slope; dry, exposed, rocky
		King devil hawkweed	10.6	occasional	pond slope; dry, exposed, rocky
		Purple-leaved willow-herb	7.8	occasional	moist exposed pond shore, and dry rocky pond slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Downy golden rod	7.1	occasional	pond slope; dry, exposed, rocky
		Aster	7.1	occasional	pond slope top; partially shaded and dry
		White birch	4.3	occasional	pond slope top; partially shaded and dry
		Gray birch	3.5	occasional	pond slope top; dry, exposed and rocky
		Common raspberry	1.4	rare	pond slope; dry, exposed, rocky
		Pearly everlasting	1.4	rare	pond slope top; dry, partially shaded
		Large pussy willow	1.4	rare	pond slope top; dry, rocky
		Canada blue grass	1.4	rare	pond slope top; dry, rocky
		Hardhack	0.7	rare	dry exposed rocky pond slope and pond slope top
		Bristly sarsaparilla	0.7	rare	pond slope; dry, exposed, rocky
		Trembling aspen	0.7	rare	pond slope top; dry, exposed, rocky
		White spruce	0.7	rare	pond slope top; partially shaded, dry, growing up against large rock
		Tickle grass	0.7	rare	pond slope; dry, exposed, rocky
			Transect 51 (0-5% Vegetated)		
II E		none			
			Transect 52 (0-5% Vegetated)		
II F		Gray birch	100	rare	flat dry spoil
			Transect 53 (0-5% Vegetated)		
II G		none			
			Transect 54 (5-10% Vegetated)		
II I	331	Tremblling aspen	30.9	common	flat areas, spoil piles
		Bristly sarsaparilla	14.8	frequent	dry spoil slope
		Calico aster	11.1	frequent	pond shore, pond slope
		Common raspberry	9.9	frequent	pond slope
		Northern blue violet	8.6	occasional	dry sandy slope
		Grass B	4.9	occasional	pond shoreline

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Cleavers	4.9	occasional	pond shoreline
		Wire grass	3.7	rare	shoreline
		Evening primrose	1.2	rare	pond shore
		Hawk's-beard	1.2	rare	shoreline of pond
		Marsh willow-herb	1.2	rare	shoreline of pond
		Rough cinquefoil	1.2	rare	pond slope
		Wild lettuce	1.2	rare	moist shoreline
		Gray birch	1.2	rare	dry sandy spoil slope
		Small pussy willow	1.2	rare	dry sandy flat spoils
		Fireweed	1.2	rare	dry sandy spoil slope
		Transect 55 (0-5% Vegetated)			
II J		Sedge H	29.2	abundant	dry flat roadside
		Downy golden rod	23.6	abundant	dry flat roadside
		Grass A	22.5	frequent	dry flat roadside
		Sweet fern	11.2	frequent	shaded flat roadside
		White birch	5.6	occasional	dry flat roadside
		Gray birch	2.9	occasional	dry flat roadside
		Lance-leaved golden rod	2.3	occasional	damp roadside
		Alder	1.7	rare	damp roadside
		Trembling aspen	1.1	rare	dry flat roadside
		Transect 56 (-30-35% Vegetated)			
II K	354	Lance-leaved golden rod	14.7	abundant	moist shore slope, spoil hollow
		Downy golden rod	13.0	occasional	moist spoil pile slope
		Manna grass	10.9	rare	wet shore
		Gray birch	10.9	abundant	moist shore, spoil slope, hollow
		Horsetail	7.6	rare	moist shore
		Trembling aspen	7.1	abundant	shore slope, spoil slope
		Heart-leaved willow	7.0	frequent	wet shore, moist spoil hollow
		Hairgrass	4.3	rare	moist shore slope
		Sedge D	4.3	occasional	wet shore, moist spoil hollow
		Mouse-ear hawkweed	4.3	occasional	moist pond slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Small white aster	3.3	occasional	spoil hollow
		Ground pine	2.2	rare	wooded spoil slope
		Small pussy willow	2.2	rare	spoil hollow
		Panicled hawkweed	2.2	rare	spoil hollow
		Coltsfoot	1.6	rare	moist shore slope
		Pearly everlasting	1.6	rare	moist spoil slope
		Rush D	1.0	rare	moist shore
		Sedge B	0.5	rare	moist shore slope
		Low sweet blueberry	0.5	rare	moist spoil slope
		White birch	0.5	rare	spoil hollow
			Transect 57 (-30-35% Vegetated)		
II L	364	Blue jointgrass	22.2	rare	dry, hollows between spoils
		Sedge D	14.8	rare	wet, shoreline
		Sedge J	13.9	rare	bog shore
		Gray birch	13.9	occasional	dry, bog slope, spoil slope
		Horsetail	6.5	rare	dry, bog slope
		Hairgrass	5.6	occasional	dry, spoil slope
		Downy golden rod	4.6	occasional	dry, spoil slope
		Trembling aspen	3.7	rare	dry, spoil slope
		Black locust	3.7	occasional	dry, spoil slope and flat area
		Wild raisin	2.8	occasional	dry, hollows between spoils piles
		Yellow loosestrife	1.9	rare	shoreline
		Pin cherry	1.9	rare	dry, spoil slope
		Sedge A	0.9	rare	shoreline
		Speckled alder	0.9	rare	shoreline
		Tall white lettuce	0.9	rare	dry, hollow between spoil piles
		Hardhack	0.9	rare	dry, spoil slope
		Unidentified plant	0.9	rare	dry, spoil slope
			Transect 58 (10-15% Vegetated)		
II M	366	Downy golden rod	30.0	abundant	hollow and flat spoils
		Sedge K	20.8	rare	wet shore
		Rush D	16.7	rare	shoreline

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Gall-of-the-earth	9.2	frequent	hollow
		Red top grass	8.3	rare	flat spoils and roadside
		Sedge D	4.2	occasional	wet shore
		Gray birch	4.2	occasional	flat spoils
		White birch	3.3	rare	flat spoils
		Lance-leaved golden rod	2.5	occasional	flat spoils
		Small pussy willow			
		Transect 59 (0-5% Vegetated)			
II N	379	Sedge D	18.3	frequent	swampy outlet to pond, hollows
		Rush C	16.5	occasional	muddy depression (hollow)
		Rush A	16.5	occasional	bog between piles (hollow)
		Sweet gale	15.6	rare	swampy outlet to pond
		Rush, unidentified	13.8	occasional	muddy depression
		Gray birch	5.5	occasional	spoil pile slope, bog shore
		Trembling aspen	4.6	occasional	spoil pile slope, bog shore
		Lance-leaved golden rod	2.8	occasional	bog shore, hollow
		Jack pine	1.8	occasional	spoil pile slope, hog shore
		Downy golden rod	1.8	rare	near bog shore (hollow)
		Hairgrass	1.8	rare	bog shore
		White birch	0.9	rare	spoil pile slope, bog shore
		Transect 60 (5-10% Vegetated)			
II O	420	Horsetail	26.9	abundant	shaded rocky stream
		King devil hawkweed	12.7	abundant	dry, exposed, rocky spoil pile
		Balsam poplar	12.7	rare	dry, exposed, rocky slope top
		Fireweed	11.2	abundant	dry, exposed, rocky slope
		Downy golden rod	6.0	occasional	dry, exposed, rocky slope
		Coltsfoot	5.2	occasional	shaded rocky stream
		Beaked willow	5.2	frequent	dry, growing from under rocks, bottom of spoil slope
		Canada hawkweed	5.2	occasional	dry, shaded, rocky spoil pile
		Ontario willow	4.5	occasional	dry, partially shaded, rocky slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Trembling aspen	3.7	occasional	dry, growing from under rocks, bottom of spoil slope
		Canada blue grass	2.2	occasional	dry, exposed, rocky slope
		Evening primrose	1.5	occasional	dry, shaded, rocky, slope top
		Large pussy willow	0.75	rare	dry, growing from under rocks, bottom of spoil slope
		White spruce	0.75	rare	dry, partially shaded, growing from under rock
		Red maple	0.75	rare	dry, exposed rocky slope
		White birch	0.75	rare	dry, exposed spoil pile slope
		Transect 61 (0-5% Vegetated)			
II O	431	Canada blue grass	18.9	rare	shoreline, shaded, moist spoil slope
		Tickle grass	18.9	rare	shoreline, shaded, moist spoil slope
		Trembling aspen	18.9	occasional	dry, shaded, spoil pile slope
		Black locust	13.5	occasional	dry, exposed ditch, dead leaves laying about
		White birch	1.5	occasional	shoreline, shaded, moist spoil pile and drainage way at top of pile
		Stinking Willie ragwort	1.5	rare	slightly above shoreline, shaded, dry
		King devil hawkweed	1.5	occasional	drainage way, dead foliage
		Sedge B	0.7	rare	shoreline, shaded, moist spoil slope
		Gray birch	0.7	rare	slightly above shoreline, shaded, dry
		Golden alexanders	0.7	rare	slightly above shoreline, shaded and dry
		Small pussy willow	0.7	rare	shaded, spoil pile slope, dry
		Transect 62 (0-5% Vegetated)			
II O	449	Small fringed black knotweed	29.6	abundant	dry rocky spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Sheep sorrel	14.8	frequent	dry rock spoil top
		Cut-leaved water-horehound	12.3	rare	only at pond shoreline
		Common skullcap	12.3	rare	only at pond shoreline
		Bristly sarsaparilla	9.9	frequent	dry spoil slope, spoil top
		Yellow loosestrife	8.6	rare	only at pond shore
		Sedge B	3.7	occasional	spoil pile top
		Evening primose	2.5	rare	dry exposed spoil slope
		Trembling aspen	2.5	rare	dry exposed spoil slope
		Downy golden rod	1.2	rare	dry spoil slope
		Gray birch	1.2	rare	dry shaded spoil slope
		Pin cherry	1.2	rare	dry spoil top
			Transect 63 (-0-5% Vegetated)		
II P		Fireweed	33.3	frequent	dry spoil slope
		Trembling aspen	22.2	common	dry spoil slope, hollow between piles
		Horsetail	11.1	occasional	dry spoil slope
		King devil hawkweed	8.9	frequent	dry spoil slope
		Bristly sarsaparilla	5.5	occasional	dry spoil pile top
		Common raspberry	4.4	occasional	dry spoil pile top
		Heart-leaved willow	3.3	occasional	dry spoil pile top
		Gray birch	2.2	rare	dry spoil slope
		Stinking Willie ragwort	2.2	rare	dry spoil slope
		Hoary willow	2.2	rare	dry spoil slope
		Pearly everlasting	1.1	rare	dry spoil slope
		Common dandelion	1.1	rare	dry spoil slope
		Mouse-ear hawkweed	1.1	rare	dry spoil pile top
		Downy golden rod	1.1	rare	dry spoil pile top
			Transect 64 (15-20% Vegetated)		
II Q		Stinking Willie ragwort	34.5	abundant	dry, flat land, open area
		Cow vetch	32.2	abundant	dry, flat land and knoll
		Sedge H	5.3	occasional	dry, flat land, open area
		Rush A	4.7	occasional	wet, ditch, open area
		Pin cherry	4.1	occasional	dry, flat land, open area

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Rough cinquefoil	2.9	occasional	dry, flat land, mixed with vetch
		Squirrel-tail grass	2.9	rare	dry, flat land, mixed with vetch
		Downy golden rod	2.3	occasional	dry, flat land and slope, mixed with vetch
		Mouse-ear hawkweed	1.7	occasional	dry, flat land, open area
		Sedge B	1.2	rare	wet, ditch, open area
		Fowl-meadow grass	1.2	rare	dry, flat land, open area
		Low black blueberry	1.2	occasional	dry, flat land, open area
		Golden alexanders	1.2	occasional	dry, flat land, open area
		Lance-leaved golden rod	1.2	rare	dry, flat land, mixed with vetch, open area
		Hardhack	0.6	rare	dry, flat land, open area
		Common raspberry	0.6	rare	dry, flat land, open area
		Hairgrass	0.6	rare	dry, slope top, open area
		Grass B	0.6	rare	dry, slope top, open area
		Trembling aspen	0.6	rare	dry, slope top, open area
		Gray birch	0.6	rare	dry, slope top, open area
		Transect 65 (-0-15% Vegetated)			
II R	458	Downy golden rod	23.3	occasional	dry, partially shaded, slope top
		White birch	16.7	abundant	near slope top, dry, exposed, rocky
		Trembling aspen	15.3	abundant	slope top, dry exposed
		Wild lily-of-the-valley	10.0	occasional	shaded, near dead stump
		Gray birch	6.7	occasional	depression, dry, shaded, dead foliage
		Grass A	6.7	rare	dry, dead foliage, partially shaded
		Rough hawkweed	6.7	rare	dry, dead foliage, partially shaded
		Rush unidentified	4.7	rare	next to waterline, damp, partially shaded

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Calico aster	4.0	occasional	dry, dead foliage, partially shaded
		Large tooth aspen	2.3	occasional	slope top, dry exposed
		King devil hawkweed	1.3	rare	top of slope, dry, partially shaded, dead foliage
		Pin cherry	0.7	rare	top of slope, dry partially shaded, dead foliage
		Common dandelion	0.7	rare	shaded, slope top, dead foliage
		Wild sarsaparilla	0.7	rare	shaded, slope top, growing from dead foliage
		Transect 66 (5-10% Vegetated)			
II S	460	Horsetail	25.0	occasional	moist and dry pond slope
		Alsike clover	9.7	rare	leaf filled drain between spoil piles
		Common strawberry	8.3	rare	leaf filled drain between spoil piles
		Field mint	5.5	rare	moist shore
		Red maple	5.5	occasional	dry pond slope
		Round-leaved pyrola	5.5	rare	leaf filled drain between spoil piles
		Cow vetch	5.5	rare	leaf filled drain between spoil piles
		Common cattail	4.2	rare	wet shore
		Trembling aspen	4.2	occasional	dry pond slope
		White birch	4.2	occasional	dry pond slope and slope top
		King devil hawkweed	4.2	occasional	dry pond slope and slope top
		Old field cinquefoil	4.2	rare	leaf filled drain between spoil piles
		Downy golden rod	4.2	rare	leaf filled drain between spoil piles
		Southern slender ladies'-tresses	2.8	occasional	leaf filled drain between spoil piles
		Yarrow	2.8	rare	leaf filled drain between spoil piles

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Woolly willow	1.4	rare	moist shore
		Pin cherry	1.4	rare	dry pond slope
		Panicled hawkweed	1.4	rare	leaf filled drain between spoil piles
			Transect 67 (40-45% Vegetated)		
II T	477	Coltsfoot	47.8	occasional	shore and pond slope
		Horsetail	23.9	occasional	pond slope
		King devil hawkweed	11.9	abundant	dry pond slope, flat spoils areas, spoil slope
		Calico aster	3.6	occasional	moist hollow between spoil piles
		Fireweed	3.2	frequent	spoil pile slope
		Heart-leaved willow	2.8	occasional	moist hollow between spoil piles
		Smoothish hawkweed	1.6	occasional	moist hollow between spoil piles
		Squirrel tail grass	1.6	occasional	dry pond slope
		Canada blue grass	1.2	occasional	moist drain way between piles
		Downy golden rod	1.2	occasional	dry spoil pile slope
		Blueberry	1.2	rare	shaded spoil slope
			Transect 68 (60-65% Vegetated)		
II T	503	Cow vetch	19.4	common	dry steep pond slope
		King devil hawkweed	10.5	common	dry flat spoils
		Downy golden rod	10.5	common	dry flat spoils
		Trembling aspen	9.7	common	dry pond slope, spoil slope
		Canada blue grass	8.1	frequent	dry spoil slope
		Canada hawkweed	5.6	frequent	dry flat spoils
		Yarrow	4.8	occasional	dry flat spoils
		Shinleaf	4.8	occasional	shaded dry spoil slope
		Small pussy willow	4.8	occasional	dry spoil slope
		Mouse-ear hawkweed	4.0	occasional	dry flat spoil piles
		Ox eye daisy	4.0	occasional	dry flat spoil piles
		Gray birch	2.4	rare	dry flat spoil tops

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		White sweet clover	2.4	rare	dry flat spoils
		White clover	1.6	rare	shaded spoil slope
		Black locust	1.6	rare	dry flat spoils
		Fireweed	0.8	rare	dry flat spoils
		White birch	0.8	rare	dry spoil slope
Transect 69 (20-25% Vegetated)					
III A	507	King devil hawkweed	28.0	abundant	dry spoil hollow, spoil slope
		Old field cinquefoil	10.5	frequent	dry spoil hollow
		Downy golden rod	10.1	occasional	dry spoil slope
		Trembling aspen	10.0	frequent	dry spoil hollow, spoil slope
		Ground pine	9.3	occasional	dry spoil hollow
		Cow vetch	6.9	occasional	dry shaded spoil slope, hollow
		Hardhack	6.0	occasional	dry spoil hollow
		Evening primrose	4.8	occasional	dry spoil slope
		Yarrow	4.8	occasional	dry spoil slope, hollow
		Red clover	2.4	occasional	dry spoil hollow
		Grass A	1.6	rare	dry spoil hollow
		White birch	1.2	occasional	dry spoil hollow
		Lance-leaved golden rod	1.2	occasional	dry spoil hollow
		Aster	1.2	rare	dry shaded slope, hollow
		Pin cherry	0.8	rare	dry spoil slope
		Gray birch	0.4	rare	dry spoil slope
		Red osier dogwood	0.4	rare	dry shaded slope
Transect 70 (10-15% Vegetated)					
III A		Downy golden rod	22.2	frequent	shaded dry spoil slope, dry roadbed
		Trembling aspen	10.2	occasional	dry spoil slope
		Lance-leaved golden rod	10.2	occasional	dry roadside
		Hairgrass	9.3	occasional	dry spoil slope, roadside
		Wild lily-of-the-valley	8.3	rare	shaded dry spoil slope
		Sweet white violet	6.5	rare	shaded dry spoil slope
		Stinking Willie ragwort	5.6	occasional	dry roadbed, roadside
		Wire grass	3.7	rare	dry spoil slope, flat spoil
		Small pussy willow	3.7	occasional	shaded dry spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Common raspberry	2.8	occasional	shaded dry spoil slope
		Sheep laurel	2.8	occasional	shaded dry spoil slope
		Wild strawberry	1.9	rare	dry roadside
		Bunchberry	1.9	rare	shaded dry spoil slope
		Tall white aster	1.9	rare	dry spoil slope
		Blackberry	1.9	rare	dry spoil slope
		Club moss	1.9	rare	shaded dry spoil slope
		Heart-leaved aster	1.9	rare	dry roadside
		Rough stemmed golden rod	1.9	rare	dry roadside
		White pine	0.9	rare	dry spoil slope
		American honeysuckle	0.9	rare	shaded dry spoil slope
			Transect 71 (0-5% Vegetated)		
III B		Trembling aspen	31.4	frequent	dry roadbed, spoil slope
		Wire grass	21.2	occasional	dry roadbed, roadside
		Downy golden rod	14.6	occasional	dry roadbed, spoil slope
		Sweet fern	14.6	rare	dry spoil slope
		Common hawkweed	3.6	occasional	dry roadbed
		Lance-leaved golden rod	3.6	rare	dry roadbed
		Hairgrass	2.2	rare	dry roadbed
		White birch	2.2	rare	dry roadbed
		Gray birch	2.2	rare	dry roadbed
		Stinking Willie ragwort	2.2	rare	dry spoil slope
		Pin cherry	0.7	rare	dry spoil slope
		Highbush blueberry	0.7	rare	dry spoil slope
		Red maple	0.7	rare	dry spoil slope
		Evening primrose	0.7	rare	dry spoil slope
			Transect 72 (0-5% Vegetated)		
III C		Evening primrose	27.7	abundant	dry spoil slope
		Mouse-ear hawkweed	12.0	occasional	dry spoil hollow
		Upland bent grass	9.0	occasional	dry spoil hollow
		Common hawkweed	7.2	occasional	dry roadside
		Lance-leaved golden rod	5.4	occasional	dry roadside, dry spoil slope
		Canada blue grass	5.4	occasional	dry roadside
		Alsike clover	5.4	occasional	dry roadbed
		Common timothy grass	4.8	occasional	dry roadside, spoil hollow

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Wire grass	4.8	occasional	dry roadside
		Trembling aspen	4.8	occasional	dry spoil slope
		Hairgrass	4.2	occasional	dry roadside
		Red clover	3.6	rare	dry roadbed
		Tall white aster	1.2	rare	dry roadside
		Fall dandelion	1.2	rare	dry roadside
		Rough-stemmed golden rod	1.2	rare	dry spoil slope
		Cow vetch	0.6	rare	dry roadside
		Common dandelion	0.6	rare	dry roadside
		Pearly everlasting	0.6	rare	dry spoil hollow
		Transect 73 (20-25% Vegetated)			
III D		King devil hawkweed	15.8	frequent	dry shaded spoil hollow
		Yarrow	14.0	occasional	dry shaded spoil hollow
		Tall white aster	10.1	occasional	dry shaded spoil hollow
		Old field cinquefoil	8.4	occasional	dry spoil slope, hollow
		Mouse-ear hawkweed	8.4	occasional	dry slope
		Gray birch	6.7	frequent	dry shaded spoil hollow
		White birch	6.2	occasional	dry spoil slope
		Trembling aspen	5.1	occasional	dry shaded spoil hollow, slope
		Ox-eye daisy	5.1	occasional	dry spoil slope
		Meadow sweet	2.8	rare	dry spoil hollow
		Balsam fir	1.7	occasional	dry spoil slope
		Lance-leaved golden rod	1.7	occasional	dry shaded spoil hollow
		Red maple	1.7	occasional	dry shaded spoil hollow
		Wire grass	1.7	occasional	shaded spoil slope
		Small white aster	1.7	occasional	dry spoil slope
		Canada blue grass	1.1	rare	dry spoil slope
		Downy golden rod	1.1	rare	dry shaded spoil hollow
		American honeysuckle	1.1	rare	dry shaded spoil hollow
		White clover	1.1	rare	dry shaded spoil hollow
		White spruce	1.1	rare	dry spoil slope
		Common hawkweed	0.6	rare	shaded spoil slope
		Primrose-leaved violet	0.6	rare	dry spoil slope
		Tamarack	0.6	rare	dry spoil hollow

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Small pussy willow	0.6	rare	shaded spoil slope
		Speckled alder	0.6	rare	shaded spoil slope
			Transect 74 (0-5% Vegetated)		
III D	529	Mouse-ear hawkweed	30.2	frequent	dry roadbed, spoil hollow, flat spoils
		Canada blue grass	17.2	occasional	dry spoil hollow
		Trembling aspen	15.5	frequent	dry spoil slope
		Pearly everlasting	14.7	occasional	dry roadbed
		Grass A	6.9	rare	dry roadside
		Alsike clover	4.3	rare	dry flat spoils
		Downy golden rod	4.3	occasional	dry roadside
		Common hawkweed	3.4	occasional	dry roadside
		Lance-leaved golden rod	2.6	rare	dry roadside, flat spoils
		Pin cherry	0.8	rare	dry roadbed
			Transect 75 (0-5% Vegetated)		
III E	537	Gray Birch	55.0	occasional	moist pond slope, dry roadbed, dry spoils, hollow
		Sedge L	15.0	rare	wet pond shore
		White birch	10.0	rare	dry spoil hollow
		White spruce	10.0	rare	dry spoil hollow
		White pine	5.0	rare	dry spoil slope
		Tamarack	5.0	rare	dry spoil hollow
			Transect 76 (0-5% Vegetated)		
III F		Old field cinquefoil	21.9	abundant	dry spoil hollow, spoil slope
		Lance-leaved golden rod	12.8	frequent	dry spoil hollow, spoil slope
		Grass A	12.8	frequent	dry spoil hollow, dry slope
		Mouse-ear hawkweed	10.6	frequent	dry spoil slope, hollow
		Gray birch	7.7	frequent	dry spoil slope, spoil hollow
		Hardhack	6.9	frequent	dry spoil slope, spoil hollow
		Downy golden rod	5.5	frequent	dry spoil hollow, spoil slope
		Bristly sarsaparilla	5.5	frequent	dry spoil slope
		Canada blue grass	5.1	occasional	dry spoil hollow
		Hairgrass	3.3	occasional	dry spoil hollow
		White birch	2.2	frequent	dry spoil slope, spoil hollow
		Ox-eye daisy	1.8	occasional	dry spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Tamarack	1.5	occasional	dry spoil slope, spoil hollow
		King devil hawkweed hawkweed	1.1	rare	shaded spoil slope
		Red maple	0.7	rare	dry spoil hollow, spoil slope
		Trembling aspen	0.4	rare	dry spoil hollow
		White spruce	0.4	rare	dry spoil slope
		Balsam fir	0.4	rare	shaded spoil hollow
		Transect 77 (20-25% Vegetated)			
III G	545	Pearly everlasting	18.6	frequent	dry flat spoils
		Mouse-ear hawkweed	12.3	frequent	dry flat spoils
		Downy golden rod	9.0	abundant	dry flat spoils, dry rocky slope
		Gray birch	7.2	abundant	dry shore slope, spoil slope
		Bugle-weed A	5.7	rare	wet shore
		Sedge M	5.4	occasional	dry flat spoils
		Tall white aster	4.5	occasional	shaded dry rocky spoil slope
		Wire grass	3.9	occasional	dry flat spoils, spoil slope
		Bristly sarsaparilla	3.6	occasional	dry rocky spoil slope
		Small white aster	3.3	occasional	dry spoil slope and flat spoils
		Hairgrass	3.3	occasional	dry spoil slope and flat spoils
		Rush B	3.0	rare	wet shore
		Southern slender ladies'-tresses	2.7	occasional	shaded dry spoil slope, flat spoils
		Hardhack	2.4	occasional	dry flat spoils
		Canada hawkweed	2.1	occasional	dry rocky spoil slope
		Trembling aspen	2.1	occasional	dry flat spoil, spoil slope
		Lance-leaved golden rod	1.5	occasional	dry rocky spoil slope, flat spoils
		Tamarack	1.5	occasional	dry rocky spoil slope
		Red maple	1.2	rare	dry rocky spoil slope
		American honeysuckle	1.2	occasional	shaded flat spoils
		Shinleaf	1.2	rare	shaded flat spoils
		Rough-stemmed golden rod	0.9	occasional	wet shore

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Green adder's mouth	0.9	rare	shaded flat spoil
		Speckled alder	0.6	rare	wet shore
		Ox-eye daisy	0.6	occasional	dry rocky spoil slope
		Common raspberry	0.6	rare	dry rocky spoil slope
		White elm	0.3	rare	dry rocky spoil slope
		Gall-of-the-earth	0.3	rare	shaded dry rocky spoil slope
			Transect 78 (0 to 5% vegetated)		
III G	Perley Brook	Downy golden rod	29.0	occasional	dry flat spoils
		Gray birch	19.4	frequent	dry spoil slope, flat spoils areas
		Hairgrass	16.1	occasional	dry flat spoils
		Grass A	16.1	occasional	dry flat spoils
		Tamarack	13.0	rare	dry flat spoils
		Tall white aster	6.5	rare	dry spoil slope
		White birch	6.5	rare	dry flat spoil slope
		Hobblebush	6.5	rare	shaded dry spoil slope
			Transect 79 (0-5% vegetated)		
III H	550	Canada blue grass	36.9	frequent	dry pond slope, spoil slope, and hollow
		Mouse-ear hawkweed	23.5	frequent	dry pond slope, spoil hollow
		Old field cinquefoil	12.1	occasional	dry pond slope, spoil hollow
		Red clover	10.1	rare	dry pond slope
		Horsetail	6.7	rare	pond shore
		Aster	5.4	occasional	pond bank, spoil slope, and hollow
		Trembling aspen	2.7	rare	dry spoil slope
		Downy golden rod	1.3	rare	dry spoil slope
		Squirrel-tail grass	0.7	rare	pond shore
		White birch	0.7	rare	dry spoils
			Transect 80 (0-5% vegetated)		
III I		Trembling aspen	79.4	frequent	dry spoil slope, flat area
		Gray birch	8.8	occasional	dry spoil slope, flat area
		White birch	5.9	rare	dry spoil hollow
		Pin cherry	5.9	rare	dry spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
			Transect 81 (30-35% vegetated)		
III I	560	Mouse-ear hawkweed	25.5	abundant	dry spoil slope
		Red-top grass	12.9	abundant	dry spoil slope, spoil hollow
		White clover	10.0	frequent	dry flat spoil
		King devil hawkweed	6.5	occasional	dry spoil hollow, slope
		Common raspberry	6.1	occasional	dry spoil slope
		Common timothy grass	6.1	occasional	dry spoil slope
		Red clover	3.9	occasional	dry spoil slope
		Ox-eye daisy	3.5	occasional	dry flat spoil, spoil slope
		Cow vetch	3.5	occasional	dry spoil slope
		Downy golden rod	3.5	occasional	dry spoil slope
		Old field cinquefoil	2.9	occasional	dry spoil slope
		Lance-leaved golden rod	2.9	occasional	dry spoil hollow
		Sheep sorrel	2.3	occasional	dry spoil slope
		Red osier dogwood	2.3	occasional	dry spoil hollow
		Unidentified plant	1.9	occasional	dry spoil hollow
		Canada blue grass	1.3	rare	dry spoil slope
		Hardhack	1.3	rare	dry spoil slope
		Tall white aster	1.3	occasional	dry spoil hollow
		Bristly sarsaparilla	1.0	occasional	dry flat spoils
		Gray birch	0.3	rare	dry spoil slope
		Aster	0.3	rare	dry spoil hollow
			Transect 82 (0-5% vegetated)		
III J	590	Mouse-ear hawkweed	11.8	abundant	pond and spoil slope
		Water horsetail	9.4	occasional	wet pond shore, lower pond slope
		Canada blue grass	9.4	frequent	dry pond slope, spoil slope
		Rough stemmed golden rod	9.4	occasional	dry spoil hollow
		Yarrow	6.5	occasional	dry spoil hollow
		Cow vetch	5.9	occasional	dry spoil slope, spoil hollow
		Shinleaf	5.9	occasional	dry spoil hollow
		Common cattail	5.3	rare	wet pond shore
		Sedge D	4.1	rare	wet pond shore
		Common hawkweed	3.5	occasional	dry pond slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Field mint	2.9	rare	wet pond shore
		Trembling aspen	2.9	occasional	dry pond slope
		Lance-leaved golden rod	2.9	rare	pond shore
		Grass A	2.9	occasional	dry pond slope
		Golden alexanders	2.4	rare	wet pond shore
		Downy golden rod	2.4	occasional	dry pond slope
		Small white aster	2.4	occasional	dry pond slope
		Hardhack	2.4	occasional	dry pond slope
		Tall white aster	1.8	rare	dry spoil hollow
		White birch	1.8	rare	dry spoil slope
		Linear-leaved willow-herb	1.8	rare	wet shore
		Arrow-leaved aster	1.2	rare	dry spoil hollow
		Pin cherry	0.6	rare	dry pond slope
		Hairgrass	0.6	rare	dry spoil top (flat spoils)
			Transect 83 (30-35% vegetated)		
III J	Near 602	Grass A	18.1	frequent	dry spoil slope
		Mouse-ear hawkweed	18.1	frequent	dry spoil slope
		Downy golden rod	13.6	frequent	dry spoil slope
		Pearly everlasting	5.1	occasional	dry spoil hollow
		King devil hawkweed	4.5	occasional	dry spoil slope, dry hollow
		Blackberry	4.2	occasional	dry spoil slope
		Daisy fleabane	4.2	occasional	dry spoil hollow
		Canada blue grass	3.6	occasional	dry spoil hollow, slope
		Yarrow	3.3	occasional	dry spoil slope
		Hairgrass	3.0	occasional	dry spoil slope
		Common raspberry	2.7	occasional	dry spoil hollow, slope
		Meadow sweet	2.4	occasional	dry spoil slope
		Small pussy willow	2.4	occasional	dry spoil hollow, slope
		Bristly sarsaparilla	2.1	occasional	dry spoil slope
		Pin cherry	2.1	occasional	dry spoil slope
		Lance-leaved golden rod	1.8	rare	dry spoil hollow
		Small white aster	1.8	rare	dry spoil hollow
		Ox-eye daisy	1.5	occasional	dry spoil hollow
		Trembling aspen	0.9	rare	dry spoil slope
		Canada golden rod	0.9	occasional	dry spoil hollow

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Canada hawkweed	0.9	occasional	dry spoil slope
		Old field cinquefoil	0.9	rare	dry spoil slope
		Sedge B	0.3	rare	dry spoil slope
		Large tooth aspen	0.3	rare	dry spoil slope
		Sandbar willow	0.3	rare	dry spoil slope
		Nannyberry	0.3	rare	dry spoil slope, shaded
		Fireweed	0.3	rare	shaded dry spoil slope
		Transect 84 (10-15% vegetated)			
III J	605	Stinking Willie ragwort	26.4	abundant	dry pond slope, spoil slope
		Common raspberry	13.5	frequent	dry spoil slope
		Yellow loosestrife	9.6	rare	wet pond shore
		Mountain-fly honeysuckle	9.0	occasional	dry pond slope
		Evening primrose	7.3	occasional	dry pond slope
		Grass Aass	7.3	frequent	dry spoil hollow, slope
		Lance-leaved golden rod	6.2	frequent	wet pond shore, dry spoil hollow
		Red top grass	6.2	occasional	dry spoil hollow
		Trembling aspen	2.3	occasional	pond slope
		Hardhack	2.3	rare	dry spoil hollow
		Rough cinqfoil	1.7	rare	dry pond slope
		Hawk's-beard	1.7	rare	dry spoil hollow
		Pin cherry	1.6	rare	dry rocky spoil slope
		White birch	1.1	rare	dry spoil hollow
		Large tooth aspen	0.6	rare	dry pond slope
		Field mint	0.6	rare	dry pond shore
		Mad-dog skullcap	0.6	rare	dry pond shore
		Gray birch	0.6	rare	dry rocky spoil slope
		Sedge M	0.6	rare	wet pond shore
		Hairgrass	0.6	rare	dry pond slope
		Transect 85 (0-5% vegetated)			
III J	613	Common raspberry	32.9	abundant	dry spoil slope
		Stinking Willie ragwort	19.3	abundant	dry spoil slope
		Ox-eye daisy	13.7	abundant	dry spoil slope
		Yellow loosestrife	9.9	frequent	dry spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Old field cinquefoil	9.3	occasional	dry spoil slope
		Hemp nettle	6.8	occasional	dry spoil slope
		Hairgrass	3.1	occasional	dry spoil hollow
		Bristly sarsaparilla	2.5	occasional	dry spoil slope
		Blackberry	0.6	rare	dry spoil slope
		Trembling aspen	0.6	rare	dry rocky spoil slope
		Meadow sweet	0.6	rare	shaded dry spoil hollow
		U^{89} shrub(unidentified)	0.6	rare	shaded spoil hollow
		Small pussy willow	0.6	rare	dry rocky spoil slope
Transect 86 (0-5% vegetated)					
III K		Trembling aspen	16.3	abundant	dry spoil slope, flat dry spoils
		Wire grass	16.3	frequent	dry flat spoils
		Downy golden rod	14.0	abundant	dry roadside, flat dry spoils
		Sedge D	9.3	rare	wet pond shore
		Canada blue grass	9.3	occasional	dry rocky spoil slope
		King devil hawkweed	8.5	rare	pond shore
		Common cattail	7.0	rare	pond shore
		Canada hawkweed	3.9	occasional	dry rocky spoil slope
		Lance-leaved golden rod	3.9	rare	pond shore
		Fireweed	3.1	occasional	dry rocky spoil slope
		White birch	2.3	rare	dry rocky spoil slope
		Small white aster	2.3	rare	pond shore
		Gray birch	0.9	rare	dry spoil slope
		Small pussy willow	0.9	rare	dry flat spoils
		Large pussy willow	0.9	rare	pond shore
		Green adder's mouth	0.9	rare	dry rocky spoil slope
Transect 87 (10-15% vegetated)					
III K	633	Trembling aspen	28.3	frequent	wet pond shore, dry slope
		Grey birch	23.4	frequent	wet pond shore, dry slope
		Shinleaf	15.2	occasional	dry spoil slope
		Downy golden rod	13.1	occasional	dry spoil hollow
		Bugleweed B	3.4	rare	wet pond shore
		White birch	3.4	occasional	dry spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Hoary willow	2.8	occasional	wet pond shore
		Golden alexanders	2.1	rare	wet pond shore
		Hairgrass	2.1	rare	wet pond shore
		Rush B	1.4	rare	wet pond shore
		Grass C	1.4	rare	wet pond shore
		Marsh willow-herb	0.7	rare	wet pond shore
		Shining willow	0.7	rare	dry spoil slope, flat spoils
		Sedge B	0.7	rare	dry spoil slope
		Southern slender ladies'-tresses	0.7	rare	dry spoil slope
		Low sweet blueberry	0.7	rare	dry spoil hollow
		Transect 88 (0-5% vegetated)			
IV A	638	Evening primrose	49.1	abundant	dry spoil slope
		Trembling aspen	12.3	frequent	dry spoil slope
		Stinking Willie ragwort	9.4	common	dry spoil slope
		Grass B	9.4	common	flat spoils
		Common raspberry	7.5	occasional	dry spoil slope
		Mouse-ear hawkweed	4.7	occasional	dry spoil slope
		Lance-leaved golden rod	2.8	occasional	dry spoil slope
		Wild strawberry	1.9	occasional	dry spoil slope
		Hairgrass	1.9	occasional	dry spoil slope
		Fowl-meadow grass	0.9	rare	flat spoils
		Transect 89 (0-5% vegetated)			
IV A	657	Gray birch	86.0	occasional	dry rocky spoil slope
		Hairgrass	14.0	rare	dry rocky spoil slope
		Transect 90 (70-75% vegetated)			
IV B		Downy golden rod	14.6	abundant	dry spoil slope
		Coltsfoot	12.6	abundant	dry roadside
		Sweet fern	9.8	abundant	flat spoils
		Bunchberry	8.4	abundant	flat spoils
		Hairgrass	8.4	occasional	wet ditch, (hollow)
		White sweet clover	1.7	rare	dry roadbed
		Tall white aster	4.5	occasional	dry spoils
		Pineapple weed	4.2	rare	dry roadbed
		Common cattail	4.2	rare	wet ditch

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Lance-leaved golden rod	3.4	occasional	wet ditch
		Prostrate knotweed	2.8	rare	wet ditch
		Fireweed	2.8	occasional	dry spoils
		Mouse-ear hawkweed	2.8	rare	dry spoils
		Sedge D	1.7	rare	wet ditch
		Pearly everlasting	1.7	rare	flat spoils
		Canada golden rod	1.7	rare	flat spoils
		Meadow sweet	1.4	occasional	shaded, spoil slope
		Common plantain	1.1	occasional	dry roadside
		Red clover	1.1	rare	dry roadside
		Grass B	1.1	rare	dry roadside
		Evening primrose	0.5	rare	dry roadbed
		Pigweed	0.5	rare	dry roadbed
		Rush A	0.5	rare	wet ditch
		Barnyard grass	0.3	rare	wet ditch
		Common timothy grass	0.3	rare	dry roadside
		Yarrow	0.3	rare	dry roadside
		Small pussy willow	0.3	rare	dry spoils
		Trembling aspen	0.3	rare	dry spoil slope
		Gray birch	0.3	rare	dry spoil slope
		Fall dandelion	0.3	rare	shaded spoil slope
			Transect 91 (20-25% vegetated)		
IV B	685	Evening primrose	16.3	abundant	dry shore slope,dry flat spoils
		Golden alexanders	15.3	frequent	shore, pond slope
		Rough cinquefoil	14.4	abundant	dry shore slope, dry flat spoils
		Trembling aspen	9.3	frequent	dry flat spoils, spoil slope
		Mouse-ear hawkweed	7.0	frequent	dry flat spoils
		Unidentified plant	6.5	frequent	dry flat spoils
		Downy golden rod	6.0	frequent	dry flat spoils, spoil slope
		Kentucky blue grass	4.2	occasional	wet shore
		Hairgrass	4.2	occasional	dry shore slope
		Rice cut grass	3.7	occasional	wet shore
		Lance-leaved golden rod	3.3	occasional	dry shore slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Stinking Willie ragwort	2.8	occasional	dry flat spoils
		Grass C	1.4	rare	dry shore slope
		Fireweed	1.4	rare	dry spoil slope
		Water-plantain	0.9	rare	wet shore
		Pearly everlasting	0.9	rare	dry shore slope
		Hardhack	0.9	rare	dry flat spoils
		White willow	0.5	rare	wet shore
		Curled dock	0.5	rare	wet shore
		Common raspberry	0.5	rare	dry spoil slope
			Transect 92 (15-20% vegetated)		
IV D	722	Downy golden rod	16.3	frequent	dry pond slope
		Canada blue grass	13.1	occasional	dry pond slope, dry flat spoils
		Bristly sarsaparilla	12.4	occasional	dry pond slope, spoil slope
		Upland bent grass	10.5	occasional	wet pond shore
		Grass A	7.8	occasional	dry pond slope, dry flat spoils
		Lance-leaved golden rod	7.2	occasional	spoil slope, wet pond shore, dry flat spoils
		Hairgrass	5.2	occasional	dry pond slope, spoil hollow
		Evening primrose	5.2	frequent	dry, flat spoils
		Sedge B	4.6	occasional	dry, pond slope, roadside
		Squirrel-tail grass	4.6	occasional	dry roadside
		Yellow loosestrife	2.6	rare	wet pond slope
		Trembling aspen	2.6	rare	spoil slope
		Common raspberry	1.9	occasional	dry pond slope
		Yarrow	1.3	rare	dry flat spoils
		Balsam poplar	1.3	rare	dry spoil slope
		Red pine (planted)	1.3	rare	dry spoil slope, dry spoil hollow
		Speckled alder	0.7	rare	wet pond shore
		Gray birch	0.7	rare	dry pond slope
		Common hawkweed	0.7	rare	spoil hollow
			Transect 93 (0-5% vegetated)		
IV D		Gray birch	36.0	frequent	dry flat spoils
		Black locust	26.1	frequent	dry flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Downy golden rod	14.4	occasional	dry spoil hollow
		Trembling aspen	8.1	occasional	dry spoil slope
		White birch	7.2	occasional	dry flat spoils
		Wire grass	7.2	occasional	dry flat spoils
		Hardhack	0.9		dry flat spoils
			Transect 94 (80-85% vegetated)		
IV C	708	Common hawkweed	23.4	occasional	dry, sunny pond slope
		Cow vetch	14.0	occasional	pond shore, spoil slope
		Yellow loosestrife	9.3	rare	pond shore, shaded spoil slope
		Small white aster	6.8	occasional	pond slope, spoil pile
		Canada blue grass	5.8	rare	pond slope, spoil pile
		Wild strawberry	5.8	rare	shaded flat spoil top
		Golden alexanders	4.9	occasional	pond slope, spoil pile
		Rough stemmed golden rod	4.2	occasional	dry, shaded pond slope
		Cat's ear	2.8	occasional	pond shore, spoil slope
		Yarrow	2.6	occasional	shaded slope
		Grass D	2.3	occasional	shaded pond slope
		Downy golden rod	2.3	occasional	dry, shaded pond slope
		Bugleweed A	1.9	occasional	pond slope
		Common timothy grass	1.9	occasional	pond slope
		Musk thistle	1.9	rare	flat spoil top
		Trembling aspen	1.9	occasional	pond slope, spoil pile
		Gray birch	1.4	occasional	dry shaded pond slope
		Lance-leaved golden rod	1.2	occasional	pond shore, spoil slope
		Meadow sweet	0.9	rare	pond slope
		White clover	0.9	rare	shaded slope
		Speckled alder	0.9	occasional	dry shaded pond slope
		Blackberry	0.7	rare	shaded slope
		Panicled aster	0.7	rare	shaded spoil slope
		Red osier dogwood	0.5	rare	shaded spoil slope
		Common raspberry	0.5	rare	dry sunny pond slope
		Red maple	0.2	rare	pond slope
		Canada hawkweed	0.2	rare	dry shaded pond slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Transect 95 (20-25% vegetated)			
IV E	617	Trembling aspen	21.0	abundant	dry pond slope, shaded, open spoil slope
		Alsike clover	12.5	rare	dry pond slope
		Horsetail	12.5	rare	dry pond slope
		Yarrow	9.5	occasional	shaded, flat spoils
		Golden alexanders	7.0	occasional	pond slope
		Yellow loosestrife	4.5	rare	dry pond slope
		Cow vetch	4.5	occasional	dry, open flat spoils, spoil slope
		Smoothish hawkweed	4.5	occasional	dry, open flat spoils, spoil slope
		Mouse-ear hawkweed	4.0	rare	dry pond slope
		Common skullcap	3.0	rare	dry, pond slope
		Common dandelion	3.0	rare	dry, pond slope
		Rough stemmed golden rod	3.0	rare	shaded, moist spoil slope
		Red clover	3.0	occasional	shaded, moist spoil slope
		Grass D	1.5	rare	dry pond slope
		Balsam willow	1.5	rare	shaded flat spoils
		Common plantain	1.0	occasional	shoreline
		Hemp nettle	1.0	rare	shoreline
		Hairy-stemmed aster	1.0	rare	shaded moist spoil slope
		Coltsfoot	0.5	rare	dry, pond slope
		Stinking Willie ragwort	0.5	rare	dry, pond slope
		White pine	0.5	rare	dry, spoil slope
		White birch	0.5	rare	dry, open flat spoils
		Transect 96 (5-10% vegetated)			
IV E		Common raspberry	33.1	rare	dry spoil slope, slope top
		Sheep sorrel	24.3	occasional	dry spoil hollow, slope
		Wild strawberry	19.1	rare	dry shaded spoil hollow
		Downy golden rod	15.4	occasional	dry roadbed, spoil slope
		Trembling aspen	2.9	occasional	dry spoil slope, dry roadside
		Common hawkweed	2.2	occasional	dry roadbed, spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Gray birch	1.5	occasional	dry roadside
		Hairgrass	0.7	rare	dry roadbed
		Red maple	0.7	rare	dry shaded spoil hollow
			Transect 97 (20-25% vegetated)		
V A	766	Ox-eye daisy	28.2	frequent	dry, roadbed
		Horsetail	13.2	occasional	moist pond slope
		Evening primrose	8.5	occasional	dry rocky slope
		Common raspberry	8.5	rare	dry rocky slope
		Canada blue grass	5.6	occasional	dry, rocky pond slope
		Stinking Willie ragwort	4.9	occasional	dry, rocky slope
		Trembling aspen	4.9	rare	dry roadbed and dry slope
		Tickle grass	4.9	rare	dry, rocky slope of spoil pile
		Gray birch	3.5	occasional	dry, compacted roadside
		Canada golden rod	2.8	rare	dry pond slope
		White or pale golden rod	2.8	rare	dry, above shoreline
		Coltsfoot	2.8	rare	dry, rocky slope
		Lanced-leaved golden rod	2.8	rare	dry, rocky roadside
		Yarrow	2.1	rare	dry, rocky pond slope
		Sedge D	1.4	rare	dry shoreline
		Grass A	1.4	rare	dry road bank
		Rough cinquefoil	0.7	rare	moist pond slope
		Aster	0.7	rare	moist pond slope
			Transect 98 (20-25% vegetated)		
V B	770	Downy golden rod	16.3	frequent	dry shaded slope
		Rough horsetail	12.2	occasional	shore
		Gray birch	12.2	occasional	shore, dry slope
		Cow vetch	9.8	occasional	dry roadside
		Trembling aspen	9.8	occasional	dry roadside, slope
		Yarrow	9.8	occasional	dry shaded slope
		Tall white aster	7.3	occasional	dry shaded slope
		Small pussy willow	6.1	occcasional	shore
		King devil hawkweed	6.1	occasional	dry, flat shaded area
		Sedge D	4.9	occasional	shore

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Wire grass	2.4	rare	dry roadside
		White spruce	1.2	rare	dry slope
			Transect 99 (10-15% vegetated)		
V B	774	Sweet fern	13.8	frequent	dry pond slope
		Coltsfoot	11.0	frequent	pond slope
		Cut-leaved water-horehound	11.0	frequent	water's edge
		Horsetail	11.0	frequent	dry pond slope
		Yellow loosestrife	11.0	frequent	dry spoil hollow
		Trembling aspen	5.5	occasional	dry pond slope
		King devil hawkweed	5.5	occasional	dry pond slope
		Fireweed	5.5	occasional	dry pond slope
		Stinking Willie ragwort	5.5	occasional	dry slope, shade of sweet fern
		Common raspberry	5.5	occasional	dry slope
		Lance-leaved golden rod	2.8	occasional	shaded, drainage way
		Tufted hair-grass	2.2	occasional	dry pond slope
		Bristly sarsaparilla	2.2	occasional	high on dry slope
		Sedge B	1.7	occasional	water's edge
		Downy golden rod	1.7	occasional	dry pond slope
		Gray birch	1.7	occasional	dry pond slope
		Woolly willow	0.6	rare	dry pond slope
		Bull-thistle	0.6	rare	dry pond slope
		Bitter-herb	0.6	rare	dry slope, in shade of sweet fern
			Transect 100 (10-15% vegetated)		
V C		Downy golden rod	19.6	frequent	spoil slope, dry roadside
		Common raspberry	14.7	frequent	top of spoil pile
		Fowl-meadow grass	9.8	frequent	dry roadside
		Alsike clover	8.4	frequent	dry roadside
		Common timothy grass	7.0	frequent	dry roadside
		Sedge B	6.3	occasional	dry spoil slope, area between spoil piles
		King devil hawkweed	5.6	occasional	moist spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Canada blue grass	4.2	occasional	dry roadside
		Climbing false buckwheat	3.5	occasional	dry spoil pile top
		Bristly sarsaparilla	3.5	occasional	tops and sides of spoil hill
		Gray birch	2.8	occasional	dry hollow between spoil piles
		Northern blue violet	2.1	occasional	moist shaded hollow between spoil piles
		Wild sarsaparilla	2.1	occasional	moist shaded hollow between spoil piles
		Evening primose	1.4	rare	moist flat spoils
		Common plantain	1.4	rare	dry roadbed
		White birch	1.4	rare	dry roadside
		White spruce	1.4	rare	dry hollow between spoil piles
		Red maple	1.4	rare	dry spoil slope
		Gall-of-the-earth	0.7	rare	moist spoil slope
		Lance-leaved golden rod	0.7	rare	dry roadside
		Trembling aspen	0.7	rare	dry hollow between spoil piles
		Meadow sweet	0.7	rare	shaded hollow between spoil piles
		Curled dock	0.7	rare	compacted roadbed
		Transect 101 (30-35% vegetated)			
V D	775	Canada blue grass	13.4	abundant	dry flat rocky spoils
		Horsetail	11.5	rarely encountered	pond slope near water
		Common raspberry	8.2	frequent	dry slope, rocky area
		Common plantain	6.6	frequent	dry compacted roadbed
		Bristly sarsaparilla	6.6	frequent	dry pond slope, flat spoils
		Lance-leaved golden rod	4.9	frequent	dry pond slope, flat spoils
		Coltsfoot	4.9	rarely encountered	pond slope
		Smoothish hawkweed	4.9	frequent	dry flat spoils
		Common dandelion	3.3	occasional	dry pond slope
		Gray birch	3.3	occasional	dry flat spoils
		Evening primose	3.3	occasional	dry flat spoils
		Sweet fern	3.3	occasional	dry shore slope
		Trembling aspen	3.3	occasional	dry shore slope, flat spoils

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Rough-fruited cinquefoil	2.3	occasional	dry spoils
		Canada golden rod	2.3	occasional	dry flat spoils
		Fireweed	2.3	occasional	dry slope, flat spoils
		Sedge D	1.6	rare	shoreline
		Hairgrass	1.6	rare	dry flat spoils
		Mouse-ear hawkweed	1.6	occasional	dry spoils
		Panicled hawkweed	1.6	occasional	dry flat spoils
		Peppergrass	1.3	rare	dry flat spoils
		Blueberry	1.3	rare	pond slope
		Willow	1.0	rare	dry spoil slope
		Bracken fern	1.0	rare	dry area near alders
		Blackberry	1.0	rare	shaded area near alders
		Sedge B	1.0	rare	shoreline
		Wild strawberry	0.7	rare	dry flat rocky area
		Tamarack	0.7	rare	dry spoil slope
		Willow A	0.6	rare	shore slope
		Slender wheat grass	0.3	rare	dry flat roadbed
		Fowl-meadow grass	0.3	rare	dry flat roadbed
			Transect 102 (20-25% vegetated)		
V E	789	Bunchberry	14.9	common in woods area	moist shaded forest edge
		Horsetail	12.8	frequent	moist pond shore
		Coltsfoot	10.7	frequent	moist pond slope
		Lance-leaved golden rod	8.5	frequent	wet depressions near woods
		Bracken fern	8.5	frequent	found only in moist woods
		Blackberry	8.5	frequent	moist woods edge
		Wild lily-of-the-valley	6.4	frequent	moist shaded woods
		Red top grass			
		Gray birch	5.9	frequent	dry flat spoils
		Cow vetch	4.3	occasional	flat area near woods
		Red clover	4.3	occasional	wet flat area near woods
		Grass E	2.1	occasional	moist woods edge
		White spruce	1.7	occasional	dry exposed spoils
		Heart-leaved aster	1.3	rare	dry exposed piles

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Large pussy willow	0.9	rare	flat dry spoils
		Sedge B	0.9	rare	dry flat area near woods
		Gall-of-the-earth	0.4	rare	moist area in woods edge
			Transect 103 (40-45% vegetated)		
V E	786	Gray birch	23.4	abundant	dry, flat pond slope top
		Coltsfoot	14.6	abundant	shoreline, pond slope
		Stinking Willie ragwort	11.7	abundant	dry, steep, pond slope
		Canada blue grass	5.8	frequent	dry, steep pond slope
		Mouse-ear hawkweed	5.8	frequent	dry, steep pond slope, also wood's edge
		Sweet fern	5.8	frequent	dry, flat pond slope top
		Bracken fern	5.8	frequent	edge of woods, dry
		Bunchberry	5.8	frequent	woods edge, moist shaded
		Trembling aspen	3.5	occasional	shoreline, pond slope
		Teaberry	2.9	occasional	woods edge, moist shaded
		Downy golden rod	2.9	occasional	dry slope, near road
		White spruce	2.3	occasional	dry, flat pond slope top
		Blackberry	2.3	occasional	dry, open, woods edge
		Sheep laurel	2.3	occasional	Dry, open, woods edge
		Fireweed	1.8	occasional	dry, steep pond slope
		Horsetail	1.2	occasional	shoreline, dry, rocky
		Cow wheat	0.6	rare	woods edge, moist shaded
		Sedge H	0.6	rare	dry, flat pond slope top
		Willow	0.6	rare	dry pond slope
			Transect 104 (30-35% vegetated)		
V F	792	Coltsfoot	18.3	abundant	dry, rocky shore slope
		Common cattail	9.1	frequent	water, near shoreline
		Common raspberry	9.1	frequent	dry, rocky shore slope
		Stinking Willie ragwort	9.1	frequent	dry, rocky slope
		Sweet white violet	6.8	frequent	dry rock pile
		Sedge D	4.6	occasional	shoreline
		Lance-leaved golden rod	4.6	occasional	dry rocky slope
		Meadow sweet	4.6	occasional	dry rocky area
		Field pussy's toes	3.7	occasional	dry flat area

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Trembling aspen	3.2	occasional	shoreline
		Blackberry	3.2	occasional	dry rocky slope
		Fox tail grass	3.2	occasional	dry rocky slope
		Gray birch	2.7	occasional	dry, rocky shore slope
		Cow vetch	2.3	occasional	dry, rocky shore slope
		Small fringed black knotweed	2.3	occasional	dry, rocky slope
		Climbing false buckwheat	1.8	occasional	dry, rocky slope
		Old field cinquefoil	1.8	occasional	dry, rocky slope
		Pennsylvania bitter cress	1.4	occasional	shoreline
		Hoary willow	1.4	occasional	dry, rocky shore slope
		Tufted hair-grass	1.4	occasional	dry, rock pile
		Speckled alder	0.9	rare	shoreline
		White spruce	0.9	rare	dry, rocky shore slope
		Bluejoint grass	0.5	rare	dry, rocky shore slope
		Mouse ear hawkweed	0.5	rare	dry, rocky shore slope
		White birch	0.5	rare	dry, rocky shore slope
		Pearly everlasting	0.5	rare	dry, rock pile
		Sedge B	0.5	rare	dry, rock pile
		Yarrow	0.5	rare	dry, rocky slope
		Rough golden rod	0.5	rare	dry, rocky spoils
		Sedge A	0.5	rare	dry, flat area
		Transect 105 (20-25% vegetated)			
V G		Fowl-meadow grass	29.2	frequent	dry roadside
		Pearly everlasting	14.6	frequent	dry hollow between spoil piles
		Trembling aspen	11.4	abundant	dry spoil slope
		Bunchberry	11.4	frequent	dry shaded spoil slope
		Downy golden rod	5.7	frequent	dry roadside
		Blueberry	4.9	occasional	rocky shaded spoil slope
		Rhodora	3.3	occasional	dry shaded slope
		Common raspberry	3.3	occasional	shaded flat spoil pile
		Sheep sorrel	3.2	occasional	dry spoil slope
		Lance-leaved golden rod	3.2	occasional	dry roadside
		False climbing buckwheat	2.4	occasional	dry spoil slope
		Stinking Willie ragwort	1.6	occasional	dry spoil slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Sheep laurel	1.6	occasional	dry spoil slope
		Gray birch	1.6	occasional	dry roadside
		Small pussy willow	1.6	occasional	dry roadside
		Large tooth aspen	0.8	rare	dry spoil slope
			Transect 106 (70-75% vegetated)		
V H		Shinleaf	21.5	abundant	slope drain, shaded
		Balsam fir	16.9	abundant	sunny slope top
		Trembling aspen	9.2	abundant	shaded slope
		Gray birch	7.7	abundant	sunny slope top
		Hemp nettle	6.1	frequent	drain, shaded
		Wild raisin	5.5	frequent	shaded slope
		White birch	4.6	frequent	sunny slope top
		Grass A	4.6	occasional	drain, shaded
		White violet	4.6	rare	shaded slope
		Ox-eye daisy	3.7	rare	shaded slope
		Yarrow	3.7	rare	open slope
		Smoothish hawkweed	1.8	rare	open, moss covered floor
		White spruce	1.5	rare	sunny, slope top
		Rough cinquefoil	1.2	rare	drain slope, shaded
		Red maple	1.2	occasional	shaded slope
		Wintergreen	1.2	rare	shaded slope
		Sweet fern	1.2	rare	sunny slope
		Low sweet blueberry	1.2	rare	open, moss covered floor
		Common raspberry	1.2	rare	open slope
		Willow	0.6	rare	moist, pile top
		Tickle grass	0.6	rare	drain, shaded
			Transect 107 (25-30% vegetated)		
V I		Old field cinquefoil	31.0	abundant	dry exposed slope
		Gray birch	24.1	abundant	dry exposed slope
		Downy golden rod	13.8	frequent	dry exposed slope
		Grass A	6.9	occasional	dry exposed slope
		King devil hawkweed	6.9	occasional	flat, dry exposed
		Bristly sarsaparilla	3.4	occasional	flat, dry exposed
		Sheep sorrel	3.4	occasional	flat, dry exposed

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Evening primrose	3.4	occasional	flat, dry exposed
		White birch	2.8	occasional	dry exposed slope
		Sedge H	1.4	rare	dry exposed slope
		Cow vetch	0.7	rare	dry exposed slope
		Sedge B	0.7	rare	dry exposed slope
		Trembling aspen	0.7	rare	dry exposed flat spoils
		Meadow sweet	0.7	rare	flat, dry exposed
			Transect 108 (80-85% vegetated)		
V I	812	Trembling aspen	39.7	abundant	shoreline
		White birch	13.2	frequent	dry flat area
		Small fringed black knotweed	13.2	frequent	dry flat area
		Evening primrose	10.6	frequent	dry, pond slope
		Golden alexanders	7.9	occasional	moist area, near shore
		Gray birch	5.3	occasional	dry slope
		Common raspberry	5.3	occasional	dry slope
		Stinking Willie ragwort	2.1	occasional	dry pond slope
		Sedge B	1.6	rare	shoreline
		Fowl-meadow grass	0.5	rare	dry pond slope
		Large pussy willow	0.5	rare	dry flat area
			Transect 109 (5-10% vegetated)		
V J	Old area	Gray birch	48.5	frequent	shaded roadside
		White birch	18.2	occasional	shaded roadside
		Sedge B	18.2	occasional	open, dry slope
		Trembling aspen	9.1	occasional	shaded roadside
		Balsam fir	3.0	rare	shaded slope
		Downy golden rod	3.0	rare	dry slope
			Transect 110 (10-15% vegetated)		
V J	824	Grass A	31.3	frequent	dry pond slope
		Tickle grass	12.5	rare	shaded spoil slope
		White birch	10.9	occasional	dry pond slope
		Blackberry	9.4	rare	dry, rocky spoil slope
		Common raspberry	7.8	rare	dry, rocky spoil top
		Canada blue grass	6.3	rare	shoreline
		Trembling aspen	6.3	occasional	dry pond slope

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		Gray birch	6.3	occasional	dry, flat roadside
		Large-tooth aspen	3.1	rare	dry, rocky spoil slope
		Bristly sarsaparilla	3.1	rare	dry, rocky spoil top
		Lance-leaved golden rod	1.7	rare	dry flat roadside
		Downy golden rod	1.7	rare	shaded spoil slope
			Transect 111 (0-5% vegetated)		
V K	832	Ox-eye daisy	36.9	occasional	rocky roadside
		Common raspberry	33.4	rare	dry slope top
		Rough cinquefoil	9.2	occasional	old roadbed
		Golden rod	4.6	rare	rocky roadside
		New York aster	4.6	rare	rocky roadside
		Gray birch	4.6	rare	old roadbed
		Sedge B	3.1	rare	old roadbed
		Downy golden rod	1.5	rare	rocky roadbed
		Red top grass	1.5	rare	old roadbed
			Transect 112 (0-5% vegetated)		
V L		Trembling aspen	23.5	occasional	dry roadbed
		Small white aster	14.7	occasional	dry roadbed
		Downy golden rod	11.8	occasional	dry roadbed
		Wire grass	8.8	occasional	dry roadbed
		Hardhack	8.8	occasional	dry roadbed
		Gray birch	7.4	occasional	dry roadbed
		Bristly sarsaparilla	5.9	rare	open, shaded spoils
		Hairgrass	4.4	occasional	dry roadbed
		White birch	2.9	rare	dry roadbed
		Stinking Willie ragwort	2.9	occasional	dry roadbed
		Red maple	2.9	rare	dry roadbed
		Downy yellow violet	1.5	rare	dry roadbed
		Canada blue grass	1.5	rare	dry roadbed
		Rough cinquefoil	1.5	rare	dry roadbed
		Rough-stemmed golden rod	1.5	rare	dry depression
			Transect 113 (10-15% vegetated)		
V M	850	Trembling aspen	39.3	abundant	shore slope
		Horsetail	28.1	rare	shoreline

Section Number	Pond Number	Common Name	% Composition of Sample	Frequency Encountered	Habitat
		White birch	16.8	occasional	shaded side of slope
		Tamarack	7.9	occasional	shaded side of pond slope
		Large-tooth aspen	3.4	rare	dry, spoil pile top
		Large pussy willow	1.1	rare	dry slope
		American honeysuckle	1.1	rare	dry slope
		Balsam fir	1.1	rare	shaded drainway
		Meadow sweet	1.1	rare	shaded ditch

TABLE B - 1(b)

Species List of Vascular Plants Found in Strip-Mined Areas
Near Minto and Chipman

COMMON NAME	LATIN NAME
Adder's-mouth, Green	*Malaxis unifolia* Michx.
Alder, Speckled	*Alnus rugosa* (Du Roi) Spreng.
Alder	*Alnus* sp.
American Brooklime	*Veronica americana* (Raf.) Schwein.
Aspen, Large-tooth	*Populus grandidentata* Michx.
Aspen, Trembling	*Populus tremuloides* Michx.
Aster, Arrow-leaved	*Aster sagittifolius* Wedemeyer
Aster	*Aster sp.*
Aster, Calico	*Aster lateriflorus* (L.) Britt.
Aster, Heart-leaved	*Aster cordifolius* L.
Aster, New York	*Aster novi-belgii* L.
Aster, Panicled	*Aster simplex* Willd.
Aster, Small White	*Aster vimineus* Lam.
Aster, Tall White	*Aster umbellatus* Mill.
Birch, Gray	*Betula populifolia* Marsh.
Birch, White	*Betula papyrifera* Marsh.
Birchwheat, Climbing False	*Polygonum scandens* L.
Bitter Cress, Pennsylvania	*Cardamine pensylvanica* Muhl.
Bitter Herb	*Centaurium* sp.
Blackberry	*Rubus allegheniensis* Porter
Blueberry	*Vaccinum* sp.
Blueberry, Highbush-	*Vaccinium corymbosum* L.
Blueberry, Low Black	*Vaccinium nigrum* (Wood) Dole
Blueberry, Low Sweet	*Vaccinium angustifolium* Ait.
Boneset	*Eupatorium perfoliatam* L.
Buckwheat, Climging False	*Polygonum scandens* L.
Bugleweed A	*Lycopus virginicus* L.
Bugleweed B	*Lycopus uniflorus* Michx.
Bunchberry	*Cornus canadensis* L.
Burdock	*Arctium* sp.
Campion, Bladder-	*Silene Cucubalus* Wibel
Caraway	*Carum Carvi* L.
Cat's-ear	*Hypochoeris radicata* L.

COMMON NAME	LATIN NAME
Cat-tail, Common	*Typha latifolia* L.
Cherry, Pin	*Prunus pensylvanica* L.
Cinquefoil	*Potentilla* sp.
Cinquefoil, Old-Field	*Potentilla simplex* Michx.
Cinquefoil, Rough	*Potentilla norvegica* L.
Cinquefoil, Rough-fruited	*Potentilla recta* L.
Cleavers	*Galium Aparine* L.
Clover, Alsike	*Trifolium hybridum* L.
Clover, Hop-	*Trifolium agrarium* L.
Clover, Low Hop-	*Trifolium procumbens* L.
Clover, Red	*Trifolium pratense* L.
Clover, White	*Trifolium repens* L.
Club Moss	*Lycopodium clavatum* L.
Coltsfoot	*Tussilago Farfara* L.
Cow Wheat	*Melampyrum lineare* Desr.
Daisy, Ox-Eye	*Chrysanthemum Leucanthemum* L.
Dandelion, Common	*Taraxacum officinale* Weber
Dandelion, Fall-	*Leontodon autumnalis* L.
Dewberry	*Rubus pubescens* Rad.
Dock, Curled	*Rumex crispus* L.
Dogwood, Red Osier	*Cornus stolonifera* Michx.
Elderberry, Common	*Sambucus canadensis* L.
Elm, White	*Ulmus americana* L.
Everlasting, Pearly	*Anaphalis margaritacea (L.)*
Fern, Boulder	*Dennstaedtia punctilobula* (Michx.) Moore
Fern, Bracken	*Pteridium aquilinum (L.)*
Fern, Interrupted	*Osmunda Claytoniana* L.
Fern, Leathery Grape	*Botrychium multifidum* (Gmel.) Rupr.
Fir, Balsam-	*Abies balsamea* (L.) Mill.
Fireweed	*Epilobium angustifolium* L.
Fleabane, Daisy-	*Erigeron annuus* (L.) Pers.
Gall-of-the-Earth	*Prenanthes trifoliolata* (Cass.) Fern.
Golden Alexanders	*Zizia aurea* (L.) W.D.J. Koch
Golden Rod	*Solidago* sp.
Golden Rod, Canada	*Solidago canadensis* L.
Golden Rod, Downy	*Solidago puberula* Nutt.
Golden Rod, Lance-leaved	*Solidago graminifolia* (L.) Salisb.
Golden Rod, Rough-Stemmed	*Solidago rugosa* Ait.
Golden Rod, White	*Solidago bicolor* L.

COMMON NAME	LATIN NAME
Grass A	*Danthonia compressa* Aust.
Grass B	*Puccinellia pumila* (Vasey) Hitchc.
Grass C	*Panicum languinosum* Ell., Var. *implicatum*
Grass D	*Muhlenbergia mexicana* (L.) Trin.
Grass E	*Brachyelytrum erectum* (Schreb.) Beauv.
Grass, Barnyard-	*Echinochloa crusgalli* (L.) Beauv.
Grass, Blue-eyed	*Sisyrinchium* sp.
Grass, Bluejoint	*Calamagrostis canadensis* (Michx.) Nutt
Grass, Canada Blue	*Poa compressa* L.
Grass, Common Timothy	*Phleum pratense* L.
Grass, Crab	*Digitaria* sp.
Grass, Fescue-	*Festuca* sp.
Grass, Fowl-meadow	*Poa palustris* L.
Grass, Foxtail	*Alopecurus* sp.
Grass, Kentucky Blue	*Poa pratensis* L.
Grass, Manna	*Glyceria melicaria* (Michx.) F.T. Hubbard
Grass, Old-witch	*Panicum capillare* L.
Grass, Panic-	*Panicum* sp.
Grass, Red Top	*Agrostis alba* L.
Grass, Reed-Canary-	*Phalaris arundinacea* L.
Grass, Rice-cut	*Leersia oryzoides* (L.) Sw.
Grass, Slender Wheat	*Agropyron trachycaulum* (Link) Malte
Grass, Squirrel-tail	*Hordeum jubatum* L.
Grass, Tickle	*Agrostis hyemalis* (Walt.) BSP.
Grass, Tufted Hair-	*Deschampsia caespitosa* (L.) Beauv.
Grass, Tufted Hair-	*Deschampsia caespitosa* (L.) Beauv., Var. *glauca*
Grass, Upland Bent	*Agrostis perennans* (Walt.) Tuckerm.
Grass, Wire	*Danthonia spicata* (L.) Beauv.
Hairgrass	*Agrostis scabra* Willd.
Hardhack or Steeplebush	*Spiraea tomentosa* L.
Hawk's-beard	*Crepis capillaris* (L.) Wallr.
Hawkweed, Canada	*Hieracium canadense* Michx.
Hawkweed, Common	*Hieracium vulgatum* Fries
Hawkweed, King Devil	*Hieracium pratense* Tausch
Hawkweed, Mouse-ear	*Hieracium Pilosella* L.
Hawkweed, Orange	*Hieracium aurantiacum* L.
Hawkweed, Panicled	*Hieracium paniculatum* L.
Hawkweed, Rough	*Hieracium scabrum* Michx.
Hawkweed, Smoothish	*Hieracium floribundum* Wimm. and Grab.

COMMON NAME	LATIN NAME
Hemp Nettle	*Galeopsis Tetrahit* L.
Hobblebush	*Viburnum alnifolium* Marsh.
Honeysuckle, Mountain-Fly-	*Lonicera villosa* (Michx.) R. and S.
Honeysuckle, American	*Diervilla Lonicera* Mill.
Horsetail, Rough	*Equisetum hyemale* L.
Horsetail, Water	*Equisetum fluviatile* L.
Horsetail	*Equisetum* sp.
Iris, Blue Flag	*Iris versicolor* L.
Knotweed, Prostrate	*Polygonum aviculare* L.
Knotweed, Small Fringed Black	*Polygonum cilinode* Michx.
Labrador-tea	*Ledum groenlandicum* Oeder
Ladies'-tresses, Southern Slender	*Spiranthes gracilis* (Bigel.) Beck
Lettuce, Tall White	*Prenanthes altissima* L.
Lettuce, Wild	*Lactuca canadensis* L.
Lily-of-the-Valley, Wild	*Maianthemum canadense* Desf.
Locust, Black	*Robinia Pseudo-Acacia* L.
Loosestrife, Yellow	*Lysimachia terrestris* (L.) BSP.
Maple, Red	*Acer rubrum* L.
Meadow-sweet	*Spiraea latifolia* (Alt.) Borkh.
Mint	*Labiatae* sp.
Mint, Field	*Mentha arvensis* L.
Nannyberry	*Viburnum Lentago* L.
Patridge-berry	*Mitchella repens* L.
Peppergrass	*Lepidium* sp.
Pigweed	*Chenopodium album* L.
Pine, Ground-	*Lycopodium obscurum* L.
Pine, Jack-	*Pinus Banksiana* Lamb.
Pine, White	*Pinus Strobus* L.
Pine, Red	*Pinus resinosa* Ait.
Pineapple-weed	*Matricaria matricarioides* (Less.) Porter
Plantain, Common	*Plantago major* L.
Plantain, Water-	*Alisma triviale* Pursh
Poplar, Balsam-	*Populus balsamifera* L.
Primrose, Evening-	*Oenothera biennis* L.
Pussy's-toes, Field	*Antennaria neglecta* Greene
Pyrola, Round-leaf	*Pyrola rotundifolia* L.
Ragwort, Stinking Willie	*Senecio Jacobaea* L.
Raspberry, Common	*Rubus idaeus* L.
Rhodora	*Rhododendron canadense* (L.) Torr.

COMMON NAME	LATIN NAME
Rush A	*Juncus filiformis* L.
Rush B	*Juncus effusus* L.
Rush C	*Juncus tenuis* Willd.
Rush D	*Juncus brevicaudatus* (Engelm.) Fern.
Sarsaparilla, Bristly	*Aralia hispida* Vent.
Sarsaparilla, Wild	*Aralia nudicaulis* L.
Sedge A	*Carex crinita* Lam.
Sedge B	*Carex scoparia* Schkuhr
Sedge C	*Carex aenea* Fern.
Sedge D	*Scirpus atrocinctus* Fern.
Sedge E	*Eleocharis obtusa* (Willd.) Schultes
Sedge F	*Scirpus cyperinus* (L.) Kunth
Sedge G	*Carex retrorsa* Schwein.
Sedge H	*Carex tonsa* (Fern.) Bickn.
Sedge I	*Carex lurida* Wahlenb.
Sedge J	*Scirpus atrovirens* Willd.
Sedge K	*Eriophorum tenellum* Nutt.
Sedge L	*Carex canescens* L.
Sedge M	*Carex spicata* Huds.
Sheep Laurel-	*Kalmia angustifolia* L.
Shinleaf	*Pyrola elliptica* Nutt.
Skullcap, Mad-Dog	*Scutellaria lateriflora* L.
Skullcap, Common	*Scutellaria epilobiifolia* A. Hamilton
Sorrel, Sheep-	*Rumex Acetosella* L.
Speedwell, Bird's-Eye	*Veronica Chamaedrys* L.
Spruce, White	*Picea glauca* (Moench) Voss
Star-flower	*Trientalis borealis* Raf.
Strawberry, Common or Wild	*Fragaria virginiana* Duchesne
Sweet Clover, White	*Melilotus alba* Desr.
Sweet Clover, Yellow	*Melilotus officinalis* (L.) Lam.
Sweet Gale	*Myrica Gale* L.
Sweet-fern	*Comptonia peregrina* (L.) Coult.
Tamarack	*Larix laricina* (DuRoi) K. Koch
Tansy, Common	*Tanacetum vulgare* L.
Teaberry	*Gaultheria procumbens* L., Var. *glaucum*
Thistle, Bull-	*Cirsium vulgare* (Savi) Tenore
Thistle, Musk-	*Carduus nutans* L.
Thistle, Welted	*Carduus crispus* L.
Trefoil, Birdsfoot	*Lotus corniculatus* L.

COMMON NAME	LATIN NAME
Twinflower	Linnaea borealis L.
Unidentified Aster	---------
Unidentified Grass	---------
Unidentified Sedge	---------
Unidentified Shrub	---------
Vetch, Tufted or Cow	Vicia Cracca L.
Violet, Downy Yellow	Viola pubescens Ait.
Violet, Northern Blue	Viola septentrionalis Greene
Violet, Primose-leaved	Viola primulifolia L.
Violet, Sweet White	Viola blanda Willd.
Violet, White	Viola incognita Brainerd
Water-Horehound, Cut-leaved	Lycopus americanus Muhl.
Wild Raisin	Viburnum cassinoides L.
Willow A	Salix myricoides (Muhl.) Carey
Willow, Balsam-	Salix pyrifolia Anderss.
Willow, Beaked	Salix Bebbiana Sarg.
Willow, Heart-leaved	Salix cordata Michx.
Willow, Hoary	Salix candida Flûgge
Willow, Large Pussy	Salix discolor Muhl.
Willow, Ontario	Salix pellita Anderss.
Willow, Sandbar	Salix interior Rowlee
Willow, Shining	Salix lucida Muhl.
Willow, Small Pussy	Salix humilis Marsh.
Willow, White	Salix alba L.
Willow, Woolly	Salix cryptodonta Fern.
Willow-Herb, Linear-Leaved	Epilobium lineare Fern.
Willow-Herb, Marsh	Epilobium palustre L.
Willow-Herb, Purple-leaved	Epilobium coloratum Biehler.
Winter-Cress	Barbarea vulgaris R.Br.
Wintergreen, Prince's-Pine	Chimaphila umbellata (L.) Bart.
Yarrow	Achillea Millefolium L.

Table B - I(c)

List Of Various Mined Area Habitats and Their Most Common Species

Section Number	Pond Shore	Pond Slope	Spoil Slope	Spoil Hollow	Flat Spoils	Road Bed	Roadside	Ditch
I A	-	-	-	-	-	-	-	-
I B	-	-	-	-	-	-	-	-
I C	-	-	-	-	-	-	-	-
I D	-	-	-	-	-	-	-	-
I E	Horsetail	Coltsfoot/ Horsetail	Smoothish Hawkweed	-	Smoothish Hawkweed/ Mouse-ear Hawkweed	Common Plantain	Timothy Grass	-
I F	Horsetail	Horsetail	Bristly Sarsaparilla/ Sweet Fern	-	White Clover	-	Sedge B	-
II A	-	-	-	-	Gray Birch	-	Downy Golden Rod	-
II B	-	-	Evening Primrose	-	-	-	Evening Primrose	-
II C	-	-	Gray Birch	-	Gray Birch	-	-	-
II D	Horsetail	Coltsfoot	-	-	Smoothish Hawkweed	-	Wire Grass	-
II E	No Vegetation							
II F	-	-	-	-	Gray Birch	-	-	-
II G	No Vegetation							

Table B - I(c)

List Of Various Mined Area Habitats and Their Most Common Species

Section Number	Pond Shore	Pond Slope	Spoil Slope	Spoil Hollow	Flat Spoils	Road Bed	Roadside	Ditch
II H	Information Not Available							
II I	Calico Aster	Common Raspberry	Bristly Sarsaparilla	-	Trembling Aspen	-	-	-
II J	-	-	-	-	-	Downy Golden Rod	Sedge H	-
II K	Manna Grass	Lance-leaved Golden Rod	Downy Golden Rod	Gray Birch	-	-	-	-
II L	Sedge D	Gray Birch	Gray Birch	Blue-joint Grass	Black Locust	-	-	-
II M	Sedge K	-	-	Downy Golden Rod	Downy Golden Rod	-	Red Top Grass	-
II N	Sedge D	-	Gray Birch	Rush C	-	-	-	-
II O	Cut-leaved Water Hore-hound	Stinking Willie Ragwort	Small Fring-ed Black Knotweed	Black Locust	Sheep-Sorrel	-	-	-
II P	-	-	Fireweed	Trembling Aspen	Bristly Sarsaparilla	-	-	-
II Q	-	-	-	-	Stinking Willie Ragwort	-	-	Rush A

Table B - 1(c)

List Of Various Mined Area Habitats and Their Most Common Species

Section Number	Pond Shore	Pond Slope	Spoil Slope	Spoil Hollow	Flat Spoils	Road Bed	Roadside	Ditch
II R	-	Unidentified Sedge	White Birch	Gray Birch	Downy Golden Rod	-	-	-
II S	Field Mint	Horsetail	-	Alsike Clover	-	-	-	-
II T	Horsetail	Coltsfoot	Trembling Aspen	Calico Aster	King Devil Hawkweed	-	-	-
III A	-	-	Downy Golden Rod	King Devil Hawkweed	Wire Grass	Downy Golden Rod	Lance-leaved Golden Rod	-
III B	-	-	Trembling Aspen	-	-	Downy Golden Rod	Wire Grass	-
III C	-	-	Evening Primrose	Mouse-ear Hawkweed	-	Alsike Clover	Common Hawkweed	-
III D	-	-	Mouse-ear Hawkweed	Canada Blue Grass	Alsike Clover	Pearly Everlasting	Wire Grass	-
III E	Sedge L	Gray Birch	Gray Birch	White Birch	-	Gray Birch	-	-
III F	-	-	Old Field Cinquefoil	Lance-leaved Golden Rod	-	-	-	-

Table B - 1(c)

List Of Various Mined Area Habitats and Their Most Common Species

Section Number	Pond Shore	Pond Slope	Spoil Slope	Spoil Hollow	Flat Spoils	Road Bed	Roadside	Ditch
III G	Bugleweed A	-	Downy Golden Rod/ Gray Birch	-	Pearly Everlasting	-	-	-
III H	Horsetail	Old Field Cinquefoil	Canada Blue Grass	Mouse-ear Hawkweed	-	-	-	-
III I	-	-	Mouse-ear Hawkweed	Red Top Grass	White Clover	-	-	-
III J	Field Mint	Stinking Willie Ragwort	Raspberry/ Stinking Willie Ragwort	Pearly Everlasting/ Lance-leaved Golden Rod	Hairgrass	-	-	-
III K	Trembling Aspen	-	Trembling Aspen	Downy Golden Rod	Wire Grass	-	Downy Golden Rod	-
IV A	-	-	Evening Primrose	-	Grass B	-	-	-
IV B	Golden Alexanders	Evening Primrose	Downy Golden Rod	-	Sweet Fern	Pineapple Weed	Coltsfoot	Tickle Grass
IV C	Yellow Loosestrife	Common Hawkweed	Tufted Vetch	-	Common Strawberry	-	-	-
IV D	Upland Bent Grass	Downy Golden Rod	Trembling Aspen	Downy Golden Rod	Gray Birch	-	Sedge B	-

Table B - I(c)

List Of Various Mined Area Habitats and Their Most Common Species

Section Number	Pond Shore	Pond Slope	Spoil Slope	Spoil Hollow	Flat Spoils	Road Bed	Roadside	Ditch
IV E	Hemp Nettle	Trembling Aspen	Trembling Aspen	Sheep-Sorrel	Yarrow	Downy Golden Rod	Gray Birch	-
V A	Sedge B	Horsetail	Evening Primrose	-	-	Ox-Eye Daisy	Gray Birch	-
V B	Horsetail	Sweet Fern	Downy Golden Rod	Yellow Loosestrife	King Devil Hawkweed	-	Tufted Vetch/ Trembling Aspen	-
V C	-	-	Downy Golden Rod	Gray Birch	Common Raspberry	Common Plantain	Fowl-Meadow Grass	-
V D	Sedge D	Horsetail	Common Raspberry	-	Canada Blue Grass	Common Plantain	-	-
V E	Horsetail	Coltsfoot	Downy Golden Rod	-	Gray Birch	-	-	-
V F	Common Cat-tail	Coltsfoot	Stinking Willie Ragwort	-	Field Pussy's-toes	-	-	-
V G	-	-	Trembling Aspen	Pearly Ever-lasting	Common Raspberry	-	Fowl-Meadow Grass	-
V H	-	-	Trembling Aspen	Shinleaf	Balsam Fir	-	-	-

Table B - 1(c)

List Of Various Mined Area Habitats and Their Most Common Species

Section Number	Pond Shore	Pond Slope	Spoil Slope	Spoil Hollow	Flat Spoils	Road Bed	Roadside	Ditch
V I	Trembling Aspen	Evening Primrose	Old-Field Cinquefoil	-	White Birch	-	-	-
V J	Canada Blue Grass	White Birch	Sedge B	-	Gray Birch	-	Gray Birch	-
V K	-	-	-	-	Common Raspberry	Rough Cinquefoil	Ox-Eye Daisy	-
V L	-	-	-	-	Bristly Sarsaparilla	Trembling Aspen	-	-
V M	Horsetail	Trembling Aspen	White Birch	Balsam Fir	Large Tooth Aspen	-	-	-

Table B - 1(d)

Density of Groundcover Vegetation On Mined Land
In the Minto-Chipman Area

Section Number	Mine Name	Approx. Years of Mining	Vegetation Density (%)	Number of Transects
I A	Eighteen Brook North Mine	1940-1969; (active)	13 (est. 5-10)	12
I B	Eighteen Brook South Mine	1955-1960; 1971-1982	3	1
I C	Wildcat Brook Mine	1975-1982	3	3
I D	Albrights Corner North Mine	1960; 1974-1982	32 (est. 0-5)	5
I E	King Road/Little River Mine	1948-1975	47 (est. 20-25)	21
I F	Wuhr's Beach Mine	1950-1959	78 (est. 20-25)	3
I G	Fire Road Mine	1983-1984		
II A	Hardwood Ridge Heath Mine	1952-1959	3	1
II B	Northside Drive/Heath Mine	1965-1972; (active)	13	1
II C	North Minto Mine	-	3	1
II D	Slope Road/North Minto Mine	shaft*; 1970's	23	2
II E	Slope Road Mine	shaft*	3	1
II F	Slope Road Mine	shaft*	3	1
II G	Slope Road Mine	shaft*	3	1
II H	Hardwood Ridge Mine	1970-1976	- (est. 0-5)	0
II I	Bairds Hill Mine	1974	8 (est. 0-5)	1
II J	Bairds Hill Mine	shaft*	3	1
II K	New England Mine	1965-1973	33	1
II L	New England Mine	1973	33	1
II M	New Avon Mine	1960's	13	1
II N	New Avon Mine	1960's	3 (est. 10-15)	1
II O	Avon Mine	1949-1969	4	3
II P	Newcastle Bridge Mine	1970's	3	1
II Q	Newcastle Bridge Mine	-	18 (est. 0-5)	1
II R	Newcastle Centre Mine	1960-1965	3	1

Table B - 1(d)

Density of Groundcover Vegetation On Mined Land
In the Minto-Chipman Area

Section Number	Mine Name	Approx. Years of Mining	Vegetation Density (%)	Number of Transects
II S	Newcastle Centre Mine	1960-1965	8	1
II T	Newcastle Centre Mine	1970-1971	53 (est. 40-45)	2
III A	Midland Mine	1950's	18	2
III B	Midland Mine	1950's	3	1
III C	Midland Mine	1950's	3	1
III D	Midland Mine	1950's	13	2
III E	Midland Mine	1950's	3	1
III F	Midland Mine	1950's	3	1
III G	Midland Mine	1950's	13	2
III H	Midland Mine	1950's	3	1
III I	Salmon Harbour Mine	1955-1959	18 (est. 10-15)	2
III J	Salmon Harbour Mine	shaft*;1952-1969; 1978-1984(active)	13	4
III K	Salmon Harbour Mine	1952-1969	8 (est. 10-15)	2
IV A	Dufferin Mine	1937-1946;(active)	3	2
IV B	Coal Creek Mine	1970-1982	48 (est. 30-35)	2
IV C	Long Creek Mine	1950	83 (est. 70-75)	1
IV D	Salmon Harbour Mine	1950's	10	2
IV E	Moray Point Mine	1955-1960	15	2
V A	Avon Road Mine	1938-1959	23 (est. 10-15)	1
V B	Coal Creek Road Mine	1938-1959	18	2
V C	Avon Road Mine	1938-1959	13	1
V D	Coal Creek Road Mine	1938-1959	33 (est. 10-15)	1
V E	Coal Creek Road Mine	1938-1959	33 (est. 10-15)	2
V F	Coal Creek Road Mine	1930-1959	33 (est. 10-15)	1

Table B - 1(d)

Density of Groundcover Vegetation On Mined Land In the Minto-Chipman

Section Number	Mine Name	Approx. Years of Mining	Vegetation Density (%)	Number of Transects
V G	Avon Road Mine	1938-1959; 1977(active)	23 (est. 10-15)	1
V H	Coal Creek Road Mine	1930's	73	1
V I	Coal Creek Road Mine	1940's;1970-1975	55 (est. 40-45)	2
V J	Marshal Road Mine	1938-1959; 1970's(active)	10	2
V K	Range Mine	1938-1959;1970's	3	1
V L	Range Mine	1938-1959;1950's	3	1
V M	Salmon Harbour Road Mine	-	13	1
	Total Number of Transects			113

* Shaft mines were operating some time before the 1950's.

() An estimate of vegetation density is noted if it appeared that the transect was not representative of the whole section.

Table B - 2 (a)

List of Lichen Species Per Transect on Strip-Mined Sites in the Minto-Chipman Area

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
			Section I A		
1	1 & 2	Cladonia cristatella	occasional	dry soil	1 - 2 inch ^{2} clumps
2	4	Cladonia cristatella	occasional	dry areas	1 - 2 in.^{2}
		Stereocaulon paschale	occasional	dry areas	2 - 3 in. diameter
3	7	Cladonia cristatella	frequent	dry soil	1 - 2 in^2
4	9	Stereocaulon paschale	frequent	on ground, open area	2 - 3 in. diameter
		Cladonia verticillata	frequent	on dry ground, open	.5 - 1 in.^{2} area
		Cladina rangiferina	rare	in woods	2 - 3 in.^{2}
6	12 & 13	Cladonia cristatella	occasional	dry gound	1 - 2 in.^{2}
8	18	Cladonia cristatella	occasional	frequent	1 in.^{2}
		Cladina rangiferina	rare	on stump	2 in.^{2}
11	57	Stereocaulon paschale	occasional	dry ground, on side	2 - 3 in. of small hill
		Cladonia cristatella	rare	dry ground	1 in.^{2}
			Section I C		
16	98	Cladina rangiferina	rare	dry soil	2 in.^{2}
			Section I D		
21	107	Baeomyces fungoides	occasional	dry gound	1 foot^2
			Section I E		
23	120	Cladonia cristatella	occasional	dry flat spoil areas	1 in.^{2}
		Cladonia chlorophea	rare	dry flat spoil areas	1 in.^{2}
24	137	Cladonia cristatella	occasional	dry, sloped, roadside	2 - 3 in.^{2}
		Cladina rangiferina	occasional	dry, on slope near	12 in.^{2} roadside
25	178	Palmia salcota	occasional	dry slope	miniscule
		Cladonia verticillata	occasional	dry roadside	scattered, 1 in. diameter
		Baeomyces fungoides	rare	dry roadside	scattered, 1 in. diameter
		Cladonia cristatella	rare	dry roadside	scattered, 1 in. diameter
26	180	Cladonia multiformis	occasional	dry, road bank	2 in.
		Stereocaulon paschale	occasional	dry, road bank	2 in.
27	205	Cladonia multiformis	abundant	damp, shaded forest floor	1 x 2 in.

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
		Cladonia cristatella	frequent	damp, shaded forest floor	1 x 5 in.
		Cladina rangiferina	occasional	damp, shaded forest floor	1 x 2 in.
			Section I E		
		Cladonia verticillata	occasional	shaded, moist slope	1 x 3 in.
28	205	Baeomyces rosea	7-8 clumps	dry, on hill	1 - 2 in.^{2}
		Cladonia cristatella	3 clumps	dry soil, on slope	1 - 2 in.^{2}
		Cladonia verticillata	3 clumps	dry soil, on slope	1 - 2 in.^{2}
		Cladonia gracilis	2 clumps	dry soil, on slope	2 - 3 in.^{2}
29	206	Stereocaulon paschale	occasional	dry, hilly area	3 in. diameter
31	211	Cladonia verticillata	occasional	dry slope	1 - 2 in.
		Cladonia cristatella	rare	dry slope	.5 - 1 in.
32	215	Stereocaulon paschale	abundant	dry, flat and sloped spoil areas	3 x 2 in.
		Cladonia gracilis	frequent	dry flat spoil areas	1 x 1 in.
		Cladonia cristatella	occasional	dry, flat and sloped spoil areas	1 x 1 in.
		Cladonia verticillata	occasional	dry, flat and sloped spoil areas	2 x 3 in.
		Cladina rangiferina	occasional	dry, flat spoil areas	3 in. diameter
		Hypogymnia physoides	rare	dry, flat spoil areas	2 in. diameter
		Cladonia multiformis	rare	dry, flat spoil areas	1 x 1 in.
33	217	Cladonia cristatella	abundant	dry slope or shaded moist slope	1 x 1 in.
			Section I E		
		Cladonia verticillata	frequent	moist slope	1 x 1 in.
		Stereocaulon paschale	frequent	dry slope	2 x 2 in.
		Cladonia gracilis	frequent	dry slope	1 x 2 in.
		Cladonia chlorophea	occasional	moist slope	1 x 1 in.
		Cladonia multiformis	occasional	dry slope	2 x 2 in.
36	247	Cladonia cristatella	frequent	dry, shaded area	1.5 x 1.5 in.
		Baeomyces fungoides	occasional	dry, shaded area	2 x 2 in.
		Cladonia chlorophea	occasional	dry, shaded area	

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
		Hypogymnia physodes	occasional	dry, flat area	1 x 2 in.
		Cladonia verticillata	occasional	dry, flat area	1 x 1 in.
37	270	*Cladonia cristatella*	occasional	dry spoil slopes	1 x 1 in.
38	272	*Cladonia cristatella*	frequent	shaded, moist forest	1 x 1 in.
		Cladina rangiferina	occasional	shaded, moist forest floor	5 x 5 in.
		Cladonia chlorophea	occasional	shaded, moist, hillside	1 x 1 in.
		Cladonia verticillata	rare	moist, moss covered hill	2 x 3 in.
		Cladonia multiformis	rare	shaded, moist forest	2 x 2 in.
39	295	*Cladonia cristatella*	abundant	dry, stony slopes	1 x 5 in.
		Cladonia verticillata	occasional	flat, dry depression	2 in. diameter
		Stereocaulon paschale	rare	flat, dry depression	2 in. diameter
		Peltigera canina	rare	dry, flat areas	2 x 2 in.
			Section I E		
40	296	*Cladonia cristatella*	occasional	dry slope	5 x 5 in.
		Cladonia gracilis	occasional	dry, flat spoil area	1 x 1 in.
		Stereocaulon paschale	occasional	dry soil, on top of slope	1 x 1 in.
		Cladonia chlorophaea	rare	moist, shaded slope	1 x 1 in.
41	299	*Palmalia salcota*	frequent	dry, exposed	2 x 2 in.
		Hypogymnia physoides	frequent	dry, exposed	2 x 2 in.
		Stereocaulon paschale	occasional	dry, exposed	2 in. diameter
		Cladonia verticillata	rare	dry, exposed	2 x 3 in.
		Cladonia cristatella	rare	dry, exposed	1 x 1 in.
		Cladonia rangiferina	rare	dry, exposed	5 x 5 in.
		Peltigera canina	rare	dry, exposed	1 x 1 in.
		Cladonia chlorophea	rare	dry, exposed	1 x 1 in.
42	300	*Cladonia coniocraea*	occasional	moist, open woods	6 x 6 in.
		Cladonia gracilis	occasional	moist, open woods	2 x 2 in.
		Peltigera canina	rare	moist, open woods	2 x 2 in.
			Section IF		
43	304	*Palmia salcota*	occasional	under old tree, moist ground (hilly) shaded	2 in. diameter
			Section IF		
		Cladonia squamosa	rare	under old tree, moist ground (hilly) shaded	1 x 4 in.

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
		Cladonia cristatella	rare	damp, shaded forest floor (near ant hill)	1 x 1 in.
45	305	*Baeomyces fungoides*	occasional	moist shaded pond slope	2 x 2 in.
			Section II A		
46		*Stereocaulon paschale*	rare	dry, rocky spoil areas	1 in. diameter
			Section II C		
48	309	*Stereocaulon tomentosum*	frequent	rocky slopes	1 x 1 in.
		Stereocaulon paschale	frequent	rocky spoil slopes	4 x 3 in.
		Crustose lichens	frequent	rocky spoil slope	1.5 in. diameter
		Cladonia cristatella	occasional	rocky spoil slope	1 x 1 in.
		Cladonia verticellata	occasional	rocky spoil slope	1 x 1 in.
		Hypogymnia physoides	occasional	rocky spoil slope	1 in. diameter
		Cladonia cenotea	occasional	rocky spoil slope	1 x 2 in.
		Cladonia gracilis	rare	shaded rocky spoil slope	1 x 3 in.
			Section II D		
50	311	*Cladonia cristatella*	rare	dry spoil pile top	4 x 4 in.
49	319	*Cladonia cristatella*	rare	dry flat spoil area	1 x 5 in.
			Section II J		
55		*Cladonia cristatella*	occasional	dry, rocky exposed soil	1 x 1 in.
			Section II K		
56	354	*Cladonia verticellata*	occasional	shaded spoil slope (birch forest)	1 x 1 in.
		Cladonia cristatella	occasional	shaded spoil slope (birch forest)	1 x 1 in.
		Cladonia crispata	rare	shades spoil slope (birch forest)	1 x 1 in.
			Section II O		
60	420	*Peltigera canina*	occasional	dry, shaded pile slope	1 x 1 in.
		Cladonia verticillata	rare(2)	dry, spoil pile slope	1 x 2 in.
		Cladonia furcata	rare(2)	dry, spoil pile slope	1 x 2 in.
		Cladonia cristatella	rare(1)	dry, spoil pile slope	1 x 1 in.

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
			Section II O		
61	431	Cladonia cristatella	rare	dry flat areas, on shades slopes also	1 x 1 in.
			Section II R		
65	458	Cladonia cristatella	occasional	dry, shaded, depression	1 x 1 in.
		Cladina rangiferina	occasional	dry, shaded depression	1 x 1 in.
		Cladonia chlorophaea	rare	dry, shaded depression	1 x 1 in.
		Stereocaulon paschale	rare	slope top, dry exposed	1 x 2 in.
			Section II S		
68	460	Cladonia cristatella	rare	shaded spoil slope	1 x 1 in.
		Cladonia verticillata	rare	shaded spoil slope	1 x 1 in.
		Stereocaulon paschale	rare	shaded spoil slope	1 x 1 in.
			Section II T		
68	503	Cladonia cristatella	frequent	dry spoil slopes, flat areas	1 x 1 in.
		Cladonia multiformis	rare	dry spoil slopes	1 x 1 in.
		Cladonia verticillata	rare	dry, flat spoil area	1 x 1 in.
		Cladina rangiferina	rare	dry, flat spoil area	1 in. diameter
			Section III A		
70		Crustose lichens	occasional	dry, shaded spoil slope	2 in. diameter
			Section III D		
73		Cladonia cristatella	occasional	dry, spoil slope	scattered individuals
74	529	Cladonia cristatella	rare	dry, flat spoils	2 x 3 feet
		Cladonia verticillata	rare	dry, flat spoil	1 x 1 in.
			Section III F		
76		Cladonia cristatella	occasional	dry spoil slope	1 x 2 in.
		Cladonia arbuscula	rare	dry spoil slope	2 x 3 in.
		Cladina rangiferina	rare	dry spoil slope	.5 x .5 in.
		Stereocaulon condensatum	rare	dry spoil slope	1 x 1 in.
		Cladonia crispata	rare	dry spoil slope	2 x 2 in.

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
			Section III G		
78	Perley Bk.	Stereocaulon paschale	frequent	dry flat spoils	1 in. diameter
		Cladonia cristatella	frequent	dry flat spoils	1 x 1 in.
		Cladonia verticillata	occasional	dry flat spoils	.5 x .5 in.
		Baeomyces fungoides	occasional	dry flat spoils	2 x 2 in.
		Cladonia crispata	occasional	dry flat spoils	scattered individuals
		Cladonia cornuta	occasional	dry flat spoils	scattered individuals
			Section III G		
77	545	Cladonia cristatella	occasional	dry flat spoil	2 x 2 in.
		Crustose lichens	occasional	shaded spoil slope	1 x 1 in.
		Cladonia crispata	occasional	dry flat spoil	1 x 2 in.
		Cladina rangiferina	occasional	dry flat spoil	1 x 1 in.
		Cladonia ecmocyna	rare	dry flat spoil	1 x 2 in.
		Cladina arbuscula	rare	dry flat spoils	1 x 1 in.
		Stereocaulon tomentosum	rare	dry flat spoil	1 x 1 in.
		Cladonia verticillate	rare	dry flat spoil	.5 x .5 in.
			Section III I		
80		Crustose lichen	rare	shaded spoil hollows	.5 in. diameter
81	560	Crustose lichen	occasional	dry spoil slope	1 x 1 in.
		Stereocaulon paschale	rare	dry spoil slope	.5 x .5 in.
		Cladonia fimbriata	rare	dry spoil slope	1' x 1'
		Cladonia multiformis	rare	dry spoil slope	1 x .5 in.
			Section III J		
82	590	Cladonia cristatella	occasional	dry spoil slope	2 x 2 in.
		Cladonia multiformis	rare	dry spoil slope	3 x 3 in.
		Cladonia pityrea	rare	dry spoil slope	1 x 1 in.
83	602	Crustose lichen	occasional	rocks on slopes, hollows	.5 x .5 in.
			Section III J		
		Cladonia cristatella	occasional	dry slopes	1 x 1 in.
		Palmia salcota	occasional	large rocks, spoil tops	1 x 1 in.
		Hypogymnia physoides	occasional	large rocks, spoil tops	1 x 1 in.
		Cladina rangiferina	rare	dry spoil hollow	1 x 1 in.
		Cladonia verticillata	rare	dry spoil slope	2 x 2 in.

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
			Section III K		
86		Cladonia cristatella	occasional	dry, rocky spoil slope	2 x 2 in.
		Crustose lichen	occasional	rocks, on slopes, flat area	.5 x .5 in.
		Stereocaulon tomentosum	rare	dry, shaded spoil slope	2 x 2 in.
		Cladonia gracilis	rare	dry spoil slope	2 x 2 in.
87	633	Crustose lichen	frequent	dry, rocky slopes	.5 in. diameter
		Cladonia chlorophaea	occasional	dry, rocky flat spoils	scattered individuals
		Baeomuces fungoides	occasional	dry, rocky flat spoils	4 in.^{2}
		Palmia salcota	rare	dry rocks	1 in. diameter
		Stereocaulon paschale	rare	dry, rocky flat spoils	2 in. diameter
		Cladonia gracilis	rare	dry, rocky flat spoils	4 x 3 in.
			Section IV A		
89	657	Cladonia cristatella	occasional	dry, rocky spoil slope	1 x 5 in.
		Crustose lichen	occasional	dry, rocky spoil slope	1 in.
		Hypogymnia physoides	occasional	dry, rocky spoil slope	.5 in.
		Cladina sp.	rare	dry, rocky spoil slope	2 in.
		Cladonia chlorophea	rare	dry, rocky spoil slope	2 in.
		Stereocaulon paschale	rare	dry, rocky spoil slope	.5 in.
		Palmia salcota	rare	dry, rocky spoil slope	--
			Section IV C		
94	708	Cladonia verticillata	rare	dry, shaded pond slope	--
			Section IV D		
92	722	Cladonia cristatella	occasional	dry flat spoils	1 x 1 in.
			Section IV E		
95	617	Cladonia verticillata	rare-occasional	dry flat spoils	1 x 2 ft.
		Cladonia gracilis	rare	dry flat spoils	1 x 1 in.
		Cladonia cristatella	rare	dry flat spoils	2 x 2 in.
		Cladina rangiferina	rare	dry flat spoils	1 x 1 in.
		Cladonia capitata	rare	dry flat spoils	two specimens
		Crustose lichen	rare-occasional	dry flat spoils	5 in. diameter

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
96	--	Cladina mitis	rare	dry spoils, flat	2 x 2 in.
		Cladonia cyanipes	rare	dry, flat spoils	1 x 1 in.
		Cladonia chlorophaea	rare	dry, flat spoils	.5 x 1 in.
		Cladonia cristatella	rare	shaded spoil hollow	1 x 5 in.
		Cladina rangiferina	rare	shaded spoil hollow	1 x 5 in.
			Section V B		
98	770	Cladina rangiferina	frequent	dry, open flat areas	1 x 1 in.
		Crustose lichens	frequent	dry, rocky pond slope	1 x 1 in.
		Cladonia cristatella	frequent	dry, pond slope	1 x 1 in.
		Baeomyces fungoides	occasional	dry, open flat areas	1 x 1 in.
		Cladonia crispata	occasional	dry, shaded flat spoil area	1 x 1 in.
		Stereocaulon paschale	occasional	dry pond slope	2 in. diameter
			Section V B		
99	774	Palmia salcota	rare	dry, hill top, on rocks	1 x 1 in.
		Hypogymnia physoides	rare	dry, hill top, on rocks	1 x 1 in.
		Cladonia verticillata	rare	dry, rocky pond slope	1 x 1 in.
		Cladonia cristatella	rare	slightly shaded dry slope	1 x 1 in.
			Section V E		
103	786	Baeomyces fungoides	rare	dry slope, woods edge	1 x 1 in.
		Cladonia cristatella	rare	dry, flat slope, near road	1 x 1 in.
			Section V G		
105	--	Cladonia cristatella	occasional	dry spoil slopes	1 x .5 in.
		Palmia salcota	rare	dry rocks on slopes	1 in. diameter
			Section V H		
106	--	Peltigera canina	occasional	shaded, under tree	2 x 2 in.
		Cladonia verticillata	rare	sunny slope	1 x 2 in.
			Section V J		
109	Old area	Cladonia cristatella	frequent	dry, shaded slope	1 x 1 in.
			Section V J		
110	824	Cladonia chlorophaea	occasional	shaded, moist slope	1 x 1 in.
		Baeomyces fungoides	occasional	dry, shaded slope	1 x 2 in.
		Cladonia verticillata	rare	dry, shaded slope	1 x 2 in.
		Cladonia cristatella	occasional	dry, rocky hill	1 x 1 in.
		Stereocaulon paschale	rare	dry, rocky hill	1 in. diameter

Transect Number	Pond Number	Latin Name	Frequency Encountered	Habitat	Colony Size
			Section V M		
113	850	*Palmia salcota*	occasional	shaded pond slope	5 x 5 in.
		Cladonia cristatella	rare	shaded pond slope	1 x 1 in.
		Cladonia verticillata	rare	shaded pond slope	1 x 1 in.
		Peltigera canina	rare	shaded pond slope	1 x 1 in.

TABLE B - 2(b)

Species List of Lichens Found in Strip-Mined Areas
Near Minto and Chipman

COMMON NAME	LATIN NAME
	Baeomyces fungoides (Sw.) Ach.
	Cladonia arbuscula (Wallr.) Hale & Culb.
	Cladina mitis (Sandst.) Hale & Culb.
	Cladina rangiferina (L.) Harm.
	Cladina sp.
	Cladonia verticellata (Hoffm.) Schaer.
	Cladonia capitata (Michx.) Spreng.
	Cladonia cenotea (Ach.) Schaer.
	Cladonia chlorophaea (Flk.) Spreng.
	Cladonia coniocraea (Flk.) Spreng.
	Cladonia cornuta (L.) Hoffm.
	Cladonia crispata (Ach.) Flot.
	Cladonia cristatella Tuck.
	Cladonia cyanipes (Somm.) Nyl.
	Cladonia ecmocyna (Ach.) Nyl.
	Cladonia fimbriata (L.) Fr.
	Cladonia furcata (Huds.) Schrad.
	Cladonia gracilis (L.) Willd.
	Cladonia multiformis Merr.
	Cladonia pityrea (Flk.) Fr.
	Cladonia squamosa (Scop.) Hoffm.
	Crustose Lichens
	Hypogymnia physodes (L.) Nyl.
	Parmelia sulcata Tayl.
	Peltigera canina (L.) Willd.
	Stereocaulon condensatum Hoffm.
	Stereocaulon paschale (L.) Hoffm.
	Stereocaulon tomentosum Fr.

Table B - 3 (a)

List of Moss Species Per Transect on Strip-Mined Sites in the Minto-Chipman Area

Pond Number	Latin Name	Frequency Encountered	Habitat
		Section I A	
1 & 2	*Sphagnum fallax*	rare	around spring
4	U^{1}	occasional	moist soil
4	U^{7}	occasional	moist ground
7	*Pleurozium schreberi*	occasional, forming mats	moist area near shore
7	U^{7}	occasional	moist, wet ground
9	U^{5}	occasional	moist area
9	*Bryum*	occasional	moist area
		Section I B	
83	U^{1}	abundant	along shore
83	*Polytrichum strictum*	abundant	along shore
		Section I C	
98	*Polytrichum*-U^{8}	occasional	wet ground
98	*Sphagnum fallax*	occasional	wet ground
98	*Polytrichum*-U^{9}	occasional	near shore
98	*Polytrichum strictum*	occasional	wet ground
		Section I D	
105	*Polytrichum strictum*	occasional	moist ground, wet area
		Section I E	
137	*Sphagnum fallax*	frequent	slightly moist, vegetated slope near road
137	*Polytrichum juniperinum*	occasional	damp, vegetated slope near road
178	U^{2}	frequent	dry, roadside
180	*Dicranum polysetum*	abundant	shaded woods
180	*Ptilium crista-castrensis*	occasional	shaded woods/grows on dead leaf coverage
180	U^{3}	rare	dry slope
205	U^{11}	occasional	quite dry, shaded
215	U^{12}	rare	moist roadside
215	*Polytrichum juniperinum*	rare	dry, flat area
217	U^{13}	occasional	moist slope

Pond Number	Latin Name	Frequency Encountered	Habitat
217	Ptilium crista-castrensis	rare	shaded/moist base of poplar
243	U^{14}	occasional	dry, depression
270	U^{15}	occasional	moist, shaded ground
272	Spagnum fallax	abundant	shaded, moist forest floor/hills
272	Dicranum polysetum	occasional	moist, shaded hill
272	Ptilium crista-castrensis	occasional	moist, shaded hill
		Section I E	
295	Polytrichum piliferum	abundant	dry, flat spoil slopes
295	U^{16}	abundant	dry, flat spoil slopes
296	U^{17}	occasional	shaded, moist hillside
296	Polytrichum juniperinum	occasional	shaded, moist hillside
296	U^{18}	occasional	shaded, moist hillside
299	U^{19}	rare	damp, mud hole
300	U^{21}	rare	moist, shaded slope
300	Ptilium crista-castrensis	rare	moist, open woods
		Section I F	
304	U^{22}	rare	under old tree, moist ground (hilly) shaded
305	Pleurozium schreberi	rare	moist, shaded pond slope
		Section II B	
308	Polytrichum strictum	rare	dry, rocky slope
		Section II C	
309	U^{23}	frequent	wet, muddy depressions
309	U^{24}	rare	rocky spoil slope
		Section II D	
311	U^{25}	rare	dry, shaded spoil pile top
		Section II I	
	U^{26}	rare	wet area (in puddle) amongst pine plantation.
		Section II J	
	Polytrichum piliferum	occasional	shaded by dry rocky soil
	U^{27}	rare	large patch near road bank

Pond Number	Latin Name	Frequency Encountered	Habitat
		Section II K	
354	U^{28}	rare	shaded spoil slope
354	U^{29}	rare	moist shaded spoil slope
354	U^{30}	rare	moist, shaded spoil slope
		Section II L	
364	**Sphagnum fallax**	rare	bogshore
		Section II M	
366	U^{33}	rare	shoreline
366	U^{34}	rare	shore slope
		Section II O	
420	U^{35}	occasional	dry, shaded, found in dead foliage
420	U^{36}	occasional	dry, shaded, found in dead foliage
431	U^{37}	occasional	dry slopes, growing on rocks
		Section II R	
458	U^{38}	rare	top of slope, dry exposed
		Section II S	
460	U^{39}	rare	shaded hollow, between spoil piles
		Section II T	
477	U^{40}	frequent	shaded moist hollows between spoil piles
477	U^{41}	occasional	moist hollow between piles
		Section III A	
507	U^{42}	rare	dry shaded spoil slope
	U^{43}	rare	dry shaded spoil slope
		Section III D	
	U^{44}	rare	dry, shaded hollow
	U^{45}	rare	dry, shaded hollow
	U^{46}	rare	dry, shaded spoil slope
529	U^{47}	rare	dry flat spoils

Pond Number	Latin Name	Frequency Encountered	Habitat
		Section III G	
Perley Brook	U^{48}	rare	shaded, dry flat spoils
" "	U^{49}	rare	shaded, dry flat spoils
" "	U^{50}	rare	dry flat spoils
545	U^{51}	rare	shaded spoil slope
545	U^{52}	rare	shaded spoil slope
545	U^{53}	rare	shaded spoil slope
545	U^{54}	rare	dry, shaded flat spoil
		Section III H	
550	U^{55}	rare	pond shore
		Section III I	
560	U^{56}	rare	dry spoil slope
		Section III K	
	U^{57}	rare	dry, shaded spoil slope
633	U^{74}	occasional	dry, rocky flat spoils
633	U^{75}	rare	dry, rocky flat spoils
633	U^{76}	rare	dry, rocky flat spoils
		Section IV A	
638	U^{58}	rare	shaded, dry slope
638	U^{59}	rare	shaded, dry slope
638	U^{60}	rare	shaded, dry slope
657	U^{61}	rare	dry, rocky spoil slope
657	U^{62}	rare	dry, rocky spoil slope
657	U^{63}	rare	dry, rocky spoil slope
708	U^{64}	occasional	dry, sunny pond slope
		Section IV D(2)	
	U^{65}	rare	dry, open, flat spoils
		Section IV E	
	U^{66}	rare	shaded spoil hollow
		Section V B	
770	*Polytrichum piliferum*	rare	rocky pond slope
		Section V D	
775	U^{69}	rare	shoreline

Pond Number	Latin Name	Frequency Encountered	Habitat
		Section V E	
786	Dicranum polysetum	rare	shaded woods edge
789	U^{68}	occasional	wet area, near woods edge
789	Polytrichum commune var. perigoniale	rare	puddle near woods
		Section V G	
	U^{70}	occasional	moist shaded area
	Polytrichum juniperinum	rare	shaded slope
		Section V H	
	Dicranum polysetum	abundant	shaded slope tops
	Polytrichum strictum	abundant	shaded slope tops
		Section V J	
Old area	U^{71}	frequent	dry, shaded slope
" "	Polytrichum juniperinum	occasional	dry, shaded slope
		Section V M	
850	U^{73}	occasional	shaded pond slope

TABLE B - 3(b)

Species List of Mosses Found in Strip-Mined Areas
Near Minto and Chipman

COMMON NAME	LATIN NAME
	Dicranum polysetum Sw.
	Pleurozium schreberi (Brid.) Mitt.
	Polytrichum commune Hedw.
	Polytrichum juniperinum Hedw.
	Polytrichum piliferum Hedw.
	Polytrichum strictum Brid.
	Ptilium crista-castrensis (Hedw.) De Not.
	Sphagnum fallax (Klinggr.) Klinggr.

TABLE B - 3(c)

Species List of Unidentified* Mosses Found in Strip-Mined Areas
Near Minto and Chipman

Section Number	Pond Number	Unknown Number
I A	4	U^{1}
I B	83	U^{1}
I E	178	short, very fine moss U^{2}
I E	180	small, fine moss U^{3}
I E	205	small, fine moss U^{4}
I A	9	U^{5}
I A	9	*Bryum* sp., U^{6}
I A	4	U^{7}
I A	7	U^{7}
I E	205	sphagnum U^{10}
I E	205	fine moss U^{11}
I E	215	fine moss U^{12}
I E	217	very, fine moss U^{13}
I E	247	fine moss #1 U^{14}
I E	270	green dot moss U^{15}
I E	295	very fine moss U^{16}
I E	296	fine, red top moss U^{17}
I E	296	very fine moss U^{18}
I E	299	very fine moss U^{19}
I E	300	sphagnum U^{20}
I E	300	very fine moss U^{21}
I E	304	red top moss U^{22}
II C	309	sponge moss U^{23}
II C	309	star feather moss U^{24}
II D	311	dark green moss U^{25}
II I	331	sphagnum like U^{26}
II J	---	fine moss U^{27}
II K	354	fine short moss U^{28}
II K	354	fine moss U^{29}
II K	354	bright green moss U^{30}
II L	364	sphagnum U^{31}
II L	364	lance moss U^{32}

Section Number	Pond Number	Unknown Number
II M	366	sphagnum U^{33}
II M	366	moss, no sporophytes U^{34}
II O	420	short moss U^{35}
II O	420	moss, no sporophyte U^{36}
II O	431	fine moss U^{37}
II R	458	brown moss U^{38}
II S	460	fine moss U^{39}
II T	477	small fine moss U^{40}
II T	477	urn moss U^{41}
III A	507	cone head moss U^{42}
III A	---	sphagnum like moss U^{43}
III D	---	sphagnum like moss U^{44}
III D	---	small moss U^{45}
III D	---	very fine moss U^{46}
III D	529	very fine moss U^{47}
III G	Perley Brook	short fine moss U^{48}
III G	" "	tree moss U^{49}
III G	" "	little brown nubs U^{50}
III G	545	tall fine moss U^{51}
III G	545	spear moss U^{52}
III G	545	brown nub moss U^{53}
III G	545	double decker moss U^{54}
III H	550	moss, no sporophyte U^{55}
III I	560	tall fine moss U^{56}
III K	---	fox claw moss U^{57}
IV A	638	sphagnum like moss U^{58}
IV A	638	very small moss U^{59}
IV A	638	small fine moss U^{60}
IV A	657	moss, no sperophyte U^{61}
IV A	657	short moss U^{62}
IV A	657	tall moss U^{63}
IV C	708	moss, no sporophyte U^{64}
IV D(2)	---	short fine moss U^{65}
IV E	---	urn top moss U^{66}
V B	770	small star feather moss U^{67+}
V B	789	red dill pickle moss U^{68}
V D	775	curled moss U^{69}

Section Number	Pond Number	Unknown Number
V G	---	fine moss U^{70}
V J	---	fine moss U^{71}
V J	---	sphagnum moss U^{72+}
V M	850	fine moss U^{73}
III K	633	brown green moss U^{74}
III K	633	very fine moss U^{75}
III K	633	tree moss, tube lichen U^{76}

Table B - 4

List of Terms Used In Describing the Frequency At Which Plant Species Were Encountered

Term	Definition
COMMON	Plant/plant group was encountered everywhere along the transect
ABUNDANT	Plant/plant group was encountered almost everywhere along the transect
FREQUENT	Plant/plant group was encountered frequently but was not common along the transect
OCCASIONAL	Plant/plant group was encountered a few times along the transect
RARE	Plant/plant group was encountered one to three times along the transect

It should be noted that the above scale was applied to groups of plants as well as individuals. For example, if fifty horsetails were found on a transect in one group but were not seen elsewhere, their frequency encountered would be rare. On the other hand, a plant found only thirty times but well scattered would be considered as having an abundant frequency.